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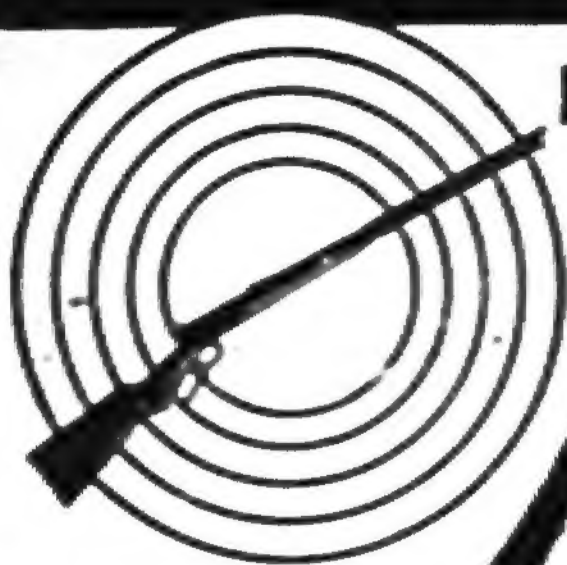


DISCORD IN SCARLET, by A. E. VAN VOGT

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THE UNIVERSITY OF CHICAGO



ASTOUNDING

SCIENCE-FICTION

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VOL. XXIV NO. 4

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COVER BY GILMORE

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Printed in U. S. A.

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① "One night a party of us started out to spear flounders in the warm, shallow Gulf coast waters," writes Mr. Taylor. "As the tide ebbs away, the flounder remains on the sandy bottom, often in only a few inches of water."



② "Enjoying the sport, we wandered farther and farther from land, trusting the lantern left on the beach with one of our party to guide us safely back."



③ "Suddenly, we realized that the tide had turned! Then, our guiding light disappeared. We didn't know which way to run—trapped in shark-filled waters!"



④ "Panic stricken, we scurried about madly. Then, a pin-point of light far away winked reassuringly! Unable to fix the disabled lantern, the man on shore had sensed our plight, and luckily had a flashlight in his duffelbag. It probably saved us. From now on we will sing the praises of 'Eveready' fresh DATED batteries—the kind you can depend upon in emergency."

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Probably it won't. This is an experimental issue, made possible even so by a gradual accumulation of factors which you have seen creep in month by month—the first few pages of smoother paper, the addition of the two-color advertisements, the spread of the smoother paper to include the entire first folio of the magazine.

So—it seems, perhaps, a somewhat spectacular improvement, suddenly come by. Like most advances, it has arrived step by step—and is at present in the experimental stage. I cannot promise its continuance, nor whether next month's issue will be so illustrated. It is not sudden, however, but a continuation of an advance started a good many months back.

A number of letters received have said that the October issue, starting the "Gray Lensman"—and *Astounding's* seventh Street & Smith year—was the best issue in the history of the magazine. That, too, was not arrived at suddenly, but by a similar, and continuing, process of growth and evolution. Dr. Smith, typically, appears in *Astounding*. Backing up Dr. Smith in that October issue were stories by Malcolm Jameson—who first appeared in *Astounding*, John Berryman—who likewise first appeared in *Astounding*; Harry Walton; Lee Gregor; and Joseph Kelleam, also found and developed by *Astounding*.

Astounding doesn't have any particular motto, I suppose, though we might adopt the delightful one de Camp proposed in his "Divide and Rule!" which appeared in *Unknown*—*Give 'Em the Works!*

But we go ahead and try to progress—and, I think, do fairly well at it—

THE EDITOR.



I jumped from \$18 a week to \$50
 -- a Free Book started me toward this
GOOD PAY IN RADIO

HERE'S
How it
Happened
 by S. J. E.
 (NAME AND ADDRESS
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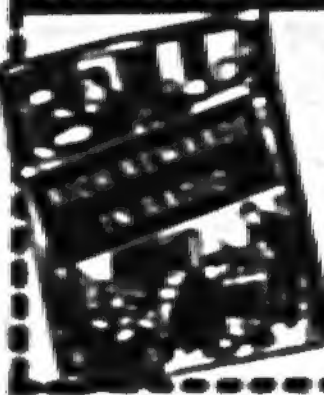
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★ In its December number, Athlete presents a star-studded issue, including:

WHAT ALL-AMERICA?—H. O. (Fritz) Crisler, University of Michigan's head coach, speaks out on the benefits and evils in the present system of picking All-Americans.

HOLD 'EM, PITTSBURGH—The inside story of the Pitt Panther football situation by a famous sports writer who lived through it.

MAKER OF CHAMPIONS—Coach Wm. Foley gives the formula he has used in turning out grid, court and diamond champions in profusion at Bloomfield High School, N. J.

Also articles by Kingsley Moses who finds two million forgotten athletes; Fred Keeling who discusses the only real amateurs left in America and top-notch stories by Jack Keefe, Richard McCann and others.

★

Athlete

ON SALE NOVEMBER 11th



around the myriad suns. And life had once crawled out of the primeval mud of ancient Glor—before cosmic explosion destroyed a mighty race and flung his—Xtl's—body out into the deeps of space, the prey of chance.

His brain pulsed on and on in the same old, old cycle of thought—thinking: one chance in decillions that his body would ever come near a galactic system. One chance in infinity itself that he fall on a planet and find a precious goal. And never, never a hope that his race would live again.

A billion times that thought had pounded to its dreary conclusion in his brain, until it was a part of him, until it was like a picture unrolling before his eyes—it and those remote wisps of shiningness out there in that blackness. And that picture was more real than the reality. He had no consciousness of the spaceship, until he touched the metal.

Hard, hardness—something material! The vague sense perception fumbled into his dulled brain, bringing a living pain—like a disused muscle, briefly, agonizingly brought into action.

The thought slumped. His brain slid back into its sleep of ages, seeing again the old picture of hopelessness and the shiningness in the black. The very idea of hardness became a dream that faded. Some remote corner of his mind, curiously alert, watched it fade, watched the shadows creep with reaching, enveloping folds of lightlessness, striving to re-engulf the dim consciousness that had flashed into such an anguish of ephemeral existence.

And then, once more, his groping fingers sent that dull pulse of awareness tapping its uncertain message to his sodden, hopeless brain.

His elongated body convulsed in senseless movement, four arms lashed out, four legs jackknifed with blind, unreasoning strength. There was a distinct sense of a blow and of a pushing

away from the hard matter.

His dazed, staring eyes, his stultified vision galvanized into life; and he saw that, in the contorted fury of his movements, he had pushed himself away from the surface of a vast, round, dark-bodied metal monster, studded with row on row of glaring lights, like diamonds. The spaceship floated there in the velvet darkness, glowing like an immense jewel, quiescent but alive, enormously, vitally alive, bringing nostalgic and vivid suggestion of a thousand far-flung planets, and of an indomitable, boisterous life that had reached for the stars and grasped them. Bringing—hope!

THE TORPID tenor of his thoughts exploded into chaos. His mind, grooved through the uncounted ages to ultimate despair, soared up, up, insanely. Life surged from the bottom point of static to the swirling, irresistible height of dynamism, that jarred every atom of his scarlet, cylindrical body and his round, vicious head. His legs and arms glistened like tongues of living fire, as they twisted and writhed in the blaze of light from those dazzling portholes. His mouth, a gash in the center of his hideous head, slavered a white frost that floated away in little frozen globules.

His brain couldn't hold the flame of that terrific hope. His mind kept dissolving, blurring. Through that blur, he saw a thick vein of light form a circular bulge in the metallic surface of the ship. The bulge became a huge door that rotated open and tilted to one side. A flood of brilliance spilled out the great opening, followed by a dozen two-legged beings in transparent metal armor, dragging great floating machines.

Swiftly, the machines were concentrated around a dark projection on the ship's surface. Intolerable light flared up as what was obviously repair work proceeded at an alarming pace.

He was no longer falling away from the ship. The faint pressure of gravi-

tational pull was drawing him down again—so slowly. Frantically, he adjusted his atomic structure to the fullest measure of attraction. But even his poorly responding brain could see that he would never make it.

The work was finished. The incandescent glare of atomic welders died to spluttering darkness. Machines were unclamped, floated toward the opening of the ship, down into it and out of sight. The two-legged beings scrambled after them. The vast, curved plain of metal was suddenly as deserted and lifeless as space itself.

Terror struck into Xtl. He'd have to fight, have to get there somehow. He couldn't let them get away now, when the whole universe was in his grasp—twenty-five short yards away. His leaching arms reached out stupidly, as if he would hold the ship by sheer fury of need. His brain ached with a slow, rhythmical hurt. His mind spun toward a black, bottomless pit—then poised just before the final plunge.

The great door was slowing in its swift rotation. A solitary being squeezed through the ring of light and ran to the dark projection, just repaired. He picked up an instrument that gleamed weirdly, a tool of some kind forgotten, and started back toward the partly open lock.

He stopped. In the glow from the portholes, Xtl could see the other's face through the transparent armor. The face stared up at him, eyes wide, mouth open. Then the mouth moved rapidly, opening and shutting, apparently a form of communication with the others.

A moment later the door was rotating again, opening wide. A group of the beings came out, two of them mounted on the top of a large, metal-barred cage, steering it under power. He was to be captured.

Oddly, his brain felt no sense of lift, no soaring hope, none of that mind-inflaming ecstasy. It was as if a drug

was dragging him down, down, into a black night of fatigue. Appalled, he fought off the enveloping stupor. He must hold to his senses. His race, that had attained the very threshold of ultimate knowledge, must live again.

THE VOICE, a strained, unrecognizable voice, came to Commander Morton through the communicators in his transparent spacesuit: "How in the name of all the bells can anything live in intergalactic space?"

It seemed to the commander that the question made the little group of men crowd closer together. The proximity of the others made them feel easier. Then they suddenly grew aware of the impalpable yet alive weight of the inconceivable night that coiled about them, pressing down to the very blazing portholes.

For the first time in years, the immensity of that night squeezed icily into Morton's consciousness. Long familiarity had bred indifference into his very bones—but now, the incredible vastness of that blackness reaching a billion trillion years beyond the farthest frontiers of man stabbed into his mind, and brought an almost dismaying awareness. His deep voice, clattering into the communicators, split that scared silence like some harsh noise, startled him:

"Gunkie Lester, here's something for your astronomical-mathematical brain. Will you please give us the ratio of chance that blew out a driver of the *Bregle* at the exact point in space where that thing was floating? Take a few hours to work it out."

The astronomer replied immediately: "I don't have to think about it. The chance is unstatable in human arithmetic. It can't happen, mathematically speaking. Here we are, a shipload of human beings, stopping for repairs halfway between two galaxies—the first time we've ever made a trip outside of our own galaxy. Here we are, I say, a tiny

point intersecting without prearrangement exactly the path of another, timier point. Impossible, unless space is saturated with such—creatures!"

"I hope not," another man shuddered. "We ought to turn a mobile unit on anything that looks like that, on general principles."

The shudder seemed to run along the communicators. Commander Morton shook his great, lean body as if consciously trying to throw off the chill of it. His eyes on the maneuvering cage above, he said:

"A regular blood-red devil spewed out of some fantastic nightmare; ugly as sin—and probably as harmless as our beautiful pussy last year was deadly. Smith, what do you think?"

The cadaverous-faced biologist said in his cold, logical voice: "This thing has arms and legs, a purely planetary evolution. If it is intelligent it will begin to react to environment the moment it is inside the cage. It may be a venerable old sage, meditating in the silence of distractionless space. Or it may be a young murderer, condemned to eternal exile, consumed with desire to sneak back home and resume the life he lived."

"I wish Korita had come out with us," said Pennons, the chief engineer, in his quiet, practical voice. "Korita's historical analysis of pussy last year gave us an advance idea of what we had to face and—"

"Korita speaking. Mr. Pennons," came the meticulously clear voice of the Japanese archaeologist on the communicators. "Like many of the others, I have been listening to what is happening as a welcome break in this, the longest journey the spaceship *Beagle* has ever undertaken. But I am afraid analysis of the creature would be dangerous at this factless stage. In the case of pussy, we had the barren, foodless planet on which we lived, and the

architectural realities of his crumbled city.

"Here we have a creature living in space a million years from the nearest planet, apparently without food, and without means of spatial locomotion. I suggest you make certain that you get him into the cage, and then study him—every action, every reaction. Take pictures of his internal organs working in the vacuum of space. Find out every possible thing about him, so that we shall know what we have aboard as soon as possible. Now, when we are fully staffed again and heading for a new galaxy for the first time in the history of man, we cannot afford to have anything go wrong, or anybody killed before we reach there. Thank you."

"And that," said Morton, "is sense. You've got your fluorite camera, Smith?"

"Attached to my suit," Smith acknowledged.

Morton who knew the capabilities of the mournful-looking biologist turned his attention back to the cage fifty feet away. He said in his deep, resonant voice: "Open the door as wide as possible, and drop over him. Don't let his hands grab the bars."

"Just a minute!" a guttural voice broke in. Morton turned questioningly to the big, plump German physicist. Von Grossen continued: "Let us not rush this capture, Commander Morton. It is true that I was not aboard last year when you had your encounter with the creature you persist in calling pussy. But when you returned to the base planet before embarking on the present voyage, the story you told to the world was not reassuring, not to me, anyway."

His hard, gray-dark face stared grimly at the others: "It is true that I can see no real objection to capturing this creature in a cage. But it happens that I am replacing a man who was

killed by this—poor. Therefore I speak for him when I say: Such a thing must never happen again."

Morton frowned, his face lined with doubt. "You put me in a spot, von Grossen. As human beings, we must take every possible precaution. As scientists, however, all is grist for our mill; everything must be investigated. There can be no thought of shunning danger before we even know it to be danger. If this voyage is to be ruled by fear, we might as well head for home now."

"Fear is not what I had in mind," said the physicist quietly. "But I believe in counting ten before acting."

Morton asked. "Any other objections?"

He felt oddly annoyed that there were none.

Nrl waited. His thoughts kept breaking up into little pieces of light and lightless—a chain of dazzle and dark—that somehow connected up with all the things he had ever known or thought. Visions of a long-dead planet trickled into his consciousness bringing a vague conceit—and a contempt of these creatures who thought to capture him.

Why, he could remember a time when his race had had spaceships a hundred times the size of this machine that swam below him. That was before they had dispensed completely with space travel, and just lived a quiet homey life building beauty from natural forces.

He watched, as the cage was driven toward him unerringly. There was nothing he could do, even had he wanted to. The gaping mouth of the large, metal-barred construction closed over him and snapped shut the moment he was inside.

Nrl clawed at the nearest bar, caught hold with grim strength. He hung there an infant, sick and dizzy with

awful reaction. Safe! His mind expanded with all the violence of an exploding force. Free electrons discharged in dizzying swarms from the chaos of the spinning atom systems inside his brain and body, frantically seeking union with the other systems. He was safe—safe after quadrillions of years of sick, despair, and on a material body with unlimited power to take him where he would to go. Safe when there was still time to carry out his sacred purpose. Or was he safe?

The cage was dropping toward the surface of the ship. His eyes became gleaming pools of caution, as they studied the men below. It was only too evident that he was to be examined. With a tremendous effort, stung by fear, he tried to push the clinging dullness from his brain, fought for alertness. An examination of him now would reveal his purpose, expose the precious objects concealed within his breast; and that must not be.

His steely-bright eyes flicked in anxious dismay over the dozen figures in transparent armor. Then his mind calmed. They were inferior creatures, obviously! Puny foes before his own remarkable power. Their very need of spacesuits proved their inability to adapt themselves to environment, proved they existed on a low plane of evolution. Yet he must not underestimate them. Here were keen brains, capable of creating and using mighty machines.

Each of the beings had weapons in holster at the side of his space armor—weapons with sparkling, translucent handles. He had noticed the same weapons in the holsters of the men at the top of the cage. That, then, would be his method if any of these creatures flashed a camera on him.

As the cage dropped into the belt of undiffused blackness between two port-holes, Smith stepped forward with his camera—and Nrl jerked himself with effortless ease up the bars to the ceiling

of the cage. The gash of his mouth in the center of his round, smooth head was split in a silent snarl of fury at the unutterable bad luck that was forcing this move upon him. His vision snapped full on; and now he could see blurrily through the hard metal of the ceiling.

One arm, with its eight wirelike fingers, lashed out with indescribable swiftness at the ceiling, through it, and then he had a gun from the holster of one of the men.

He did not attempt to readjust its atomic structure as he had adjusted his arm. It was important that they should not guess that it was he who fired the gun. Straining in his awkward position, he aimed the weapon straight at Smith and the little group of men behind him—released the flaming power.

There was a flare of incandescent violence that blotted the men from view. A swirl of dazzling light convulsed virulently across the surface of the ship. And there was another light, too. A blue sparkle that told of automatic defense screens driving out from the armored suits of the men.

In one continuous movement, Xtl released the gun, withdrew his hand; and, by the act, pushed himself to the floor. His immediate fear was gone. No sensitive camera film could have lived through the blaze of penetrating energy. And what was overwhelmingly more important—the gun was no good against himself. Nothing but a simple affair which employed the method of transmutation of one element to another, the process releasing one or two electrons from each atom system. It would require a dozen such guns to do damage to his body.

THE GROUP of men stood quite still; and Morton knew they were fighting, as he was, the blindness that lingered from the spray of violent light.

Slowly, his eyes became adjusted; and then he could see again the curved metal on which he stood, and beyond that the brief, barren crest of the ship and the limitless miles of lightless, heatless space—dark, fathomless, unthinkable gulfs. These too, a blur among the blurs of shadows, stood the cage.

"I'm sorry, commander," one of the men on the cage apologized. "The atom-gun must have fallen out of my belt, and discharged."

"Impossible!" Smith's voice came to Morton, low and tense. "In this gravitation, it would take several minutes to fall from the holster, and it wouldn't discharge in any event from such a slight jar of landing."

"Maybe I knocked against it, sir, without noticing."

"Maybe!" Smith seemed to yield grudgingly to the explanation. "But I could almost swear that, just before the flare of light dazzled me, the creature moved. I admit it was too black to see more than the vaguest blur, but—"

"Smith," Morton said sharply, "what are you trying to prove?"

He saw the long-faced biologist hunch his narrow shoulders, as if pulling himself together. The biologist mumbled: "When you put it like that, I don't know. The truth is, I suppose, that I've never gotten over the way I insisted on keeping pussy alive, with such desperately tragic results. I suspect everything now, and—"

Morton stared in surprise. It was hard to realize that it was really Smith speaking—the scientist who, it had seemed sometimes in the past, was ready to sacrifice his own life and everybody else's if it meant adding a new, important fact to the science of biology. Morton found his voice at last:

"You were perfectly right in what you did! Until we realized the truth, you expressed the majority mind of this ship's company. The development of the situation in the case of pussy

changed our opinion as well as your own, but it did not change our method of working by evidence alone. I say that we should continue to make such logic the basis of our work."

"Right. And beg your pardon, chief!" Smith was brisk-voiced again. "Crane, turn the cage light on, and let's see what we've got here."

To Morton, the silence that followed seemed like a sudden, oppressive weight, as the blaze of light showered down on Xil crouching at the bottom of the cage. The almost metallic sheen of the cylindrical body, the eyes like coals of fire, the wirelike fingers and toes, the scarlet hideousness of it startled even these men who were accustomed to alien forms of life. He broke the spell of horror, half-breathlessly:

"He's probably very handsome—to himself!"

"If life is evolution," said Smith in a stiff voice, "and nothing evolves except for use, how can a creature living in space have highly developed legs and arms? Its insides should be interesting. But now—my camera's useless! That flare of energy would have the effect of tinting the electrified lens, and of course the film's ruined. Shall I get another?"

"N-o-o-o!" Morton's clean-cut, handsome face grew dark with a frown. "We've wasted a lot of time here; and after all, we can re-create vacuum of space conditions inside the ship's laboratory, and be traveling at top acceleration while we're doing it."

"Just a minute!" Von Grossen, the plump but hard-boiled physicist, spoke. "Let's get this straight. The *Bregle* is going to another galaxy on an exploration voyage—the first trip of the kind. Our business is to study life in this new system, but we're not taking any specimens, only pictures and notes—studies of the creatures in their various environments. If we're all so nervous

about this thing, why are we taking it aboard?"

"Because"—Smith beat Morton to the reply—"we're not tied down to pictures and notes. There will, however, be millions of forms of life on every planet, and we shall be forced to the barest kind of record in most cases. This monster is different. In our fears we have almost forgotten that the existence of a creature capable of living in space is the most extraordinary thing we've ever run across. Even pussy, who could live without air, needed warmth of a kind, and would have found the absolute cold of space intolerable. If, as we suspect, this creature's natural habitat is not space, then we must find out why and how he came to be where he is. Speaking as a biologist—"

"I see," interrupted Morton dryly, "that Smith is himself again." He directed a command at the men on the cage. "Take that monster inside, and put a wall of force around the cage. That should satisfy even the most cautious."

Xil felt the faint throb of the motors of the cage. He saw the bars move, then grew conscious of a sharp, pleasant tingling sensation, brief physical activity within his body that stopped the workings of his mind for a bare second. Before he could think, there was the cage floor rising above him—and he was lying on the hard surface of the spaceship's outer shell.

With a snarl of black dismay that almost cut his face in two, he realized the truth. He had forgotten to readjust the atoms in his body after firing the gun. And now he had fallen through!

"Good Heaven!" Morton bellowed.

A scarlet streak of elongated body, a nightmare shadow in that braid of shadow and light, Xil darted across the impenetrable heavy metal to the air lock. He jerked himself down into its dazzling depths. His adjusted body dissolved through the two other locks. And then



Illustrated by Orson

It stepped through the wall to take him up in irresistible arms—

he was at one end of a long, gleaming corridor—safe for the moment!

There would be searching for him; and—he knew with a cold, hardening resolve—these creatures would never trust alive a being who could slip through solid metal. Their reason would tell them he was a superbeing, unutterably dangerous to them.

One advantage only he had—they did not know the deadliness of his purpose.

TEN MINUTES later, Morton's gray eyes flicked questioningly over the stern faces of the men gathered in the great reception room. His huge and powerful body felt oddly rigid, as if his muscles could not quite relax. His voice was mellowed, deeper, richer than normal:

"I am going to offer my resignation on the grounds that, for the second time under my leadership, an abnormal beast has gotten aboard this craft. I must assume that there is a basic lack in my mental make-up; for results, and not excuses, do count in this universe of ours; even apparently bad luck is rigorously bound up with character. I, therefore, suggest that Korita or von Grossen be named commander in my place." Korita because of the care he advocated, and von Grossen on the strength of his objection to taking any living specimens aboard—both are more fitted to hold the command than I am."

"The honorable commander has forgotten one thing," Korita said softly. "The creature was not carried into the ship. I admit it was our collective intention to bring him aboard, but it was he himself who entered. I suggest that, even if we had decided not to bring him into the interior, we could not have prevented his entry in view of his ability to slip through metal. It is absolutely absurd for Commander Morton to feel responsible."

Von Grossen heaved himself out of his chair. Now that he was out of

his spacesuit; the physicist looked not so much plump as big and iron-hard. "And that goes for me all the way. I have not been long on this ship, but I have found Commander Morton to be a most able intellect and leader of men. So let us not waste time in useless self-reproach.

"In capturing this being we must first of all straighten our minds about him. He has arms and legs, this creature, yet floats in space, and remains alive. He allows himself to be caught in a cage, but knows all the time that the cage cannot hold him. Then he drops through the bottom of the cage, which is very silly if he doesn't want us to know that he can do it. Which means that he is a very foolish creature, indeed, and we don't have to worry very much about him. There is a reason why intelligent living things make mistakes—a fundamental reason that should make it easy for us to analyze him right back to where he came from, and why he is here. Smith, analyze his biological make-up."

Smith stood up, hunk and grim. "We've already discussed the obvious planetary origin of his hands and feet. The ability to live in space, however, is an abnormal development, having no connection with natural evolution, but is the product of brain power and science, pure and simple. I suggest that here is a member of a race that has solved the final secrets of biology; and, if I knew how we should even begin to start looking for a creature that can slip through walls, my advice would be: Hunt him down and kill him within an hour."

"Er!" KELLER, the sociologist, said. He was a bald-headed man with preternaturally intelligent eyes that gleamed owlishly from behind his pince-nez. "Er, any being who could fit himself to vacuum of space condition would be lord of the universe. His kind would dwell on every planet, clutter up every

galactic system. Swarms of him would be floating in space, if space floating is what they go in for. Yet, we know for a fact that his race does not rule our galactic area. A paradox, which is worthy of investigation."

"I don't quite understand what you mean, Kellie!" Morton frowned.

"Simply, er, that a race which has solved the final secrets of biology must be millions, even billions of years in advance of man; and, as a pure sympodial—capable of adaptation to any environment—would, according to the law of vital dynamics, expand to the farthest frontier of the universe, just as man is slowly pushing himself to the remotest planets."

"It is a contradiction," Morton agreed, "and would seem to prove that the creature is not a superior being. Korita, what is this thing's history?"

The Japanese scientist shrugged: "I'm afraid I can only be of the slightest assistance on present evidence. You know the prevailing theory: That life proceeds upwards by a series of cycles. Each cycle begins with the peasant, who is rooted to his bit of soil. The peasant comes to market; and slowly the market place transforms to a town, with ever less 'inward' connection to the earth. Then we have cities and nations, finally the soulless world cities and a devastating struggle for power—a series of frightful wars which sweep men back to the peasant stage. The question becomes: Is this creature in the peasant part of this particular cycle, or in the big city 'megakopolitan' era?"

Morton's voice slashed across the silence: "In view of our limited knowledge of this creature, what basic traits should we look for, supposing him to be in the big city stage?"

"He would be a cold, invincible intellect, formidable to the ultimate degree, undefeatable—except through circumstances. I refer to the kind of circumstances that made it impossible

for us to prevent this beast entering our ship. Because of his great innate intelligence, he would make no errors of any kind."

"But he has already made an error!" von Grossen said in a silken voice. "He very foolishly fell through the bottom of the cage. It is the kind of blunder a peasant would make—"

"Suppose," Morton asked, "he were in the peasant stage?"

"Then," Korita replied, "his basic impulses would be much simpler. There would be first of all the desire to reproduce, to have a son, to know that his blood was being carried on. Assuming great fundamental intelligence, this impulse might, in the superior being, take the form of a fanatic drive toward race survival—"

He stopped, as half a dozen men came through the doorway.

Morton said: "Finished, Pennons?"

The chief engineer nodded. Then in a warning voice: "It is absolutely essential that every man on the ship get into his rubberite suit, and wear rubberite gloves."

Morton explained, grimly. "We've merged the walls around the bedrooms. There may be some delay in catching this creature, and we're taking no chances of being murdered in our beds. We—" Sharply: "What is it, Pennons?"

Pennons was staring at a small instrument in his hand; he said in a queer voice: "Are we all here, Morton?"

"Yes, except for four men guarding the engine room."

"Then . . . then something's caught in the wall of force. Quick—we must surround it."

To NTL, returning from a brief exploration of the monster ship's interior, the shock was devastating, the surprise unutterable and complete.

(One moment he was thinking complacently of the metal sections in the

hold of the ship, where he would secrete his guns; the next moment he was caught in the full sparkling fury of an energy screen.

His body writhed with an agony that blackened his brain. Thick clouds of free electrons rose up within him in that hell of pain, and flashed from system to system seeking union, only to be violently repelled by the tortured, madly spinning atom systems. For those long seconds, the wonderfully balanced instability of his structure nearly collapsed into an abyss of disintegration.

But the incredible genius that had created his marvelous body had forethought even this eventuality. Like lightning, his body endured readjustment after automatic readjustment, each new-built structure carrying the intolerable load for a fraction of a fraction of a second. And then, he had jerked back from the wall, and was safe.

In a flare of thought, his mind investigated the immediate possibilities. Obviously, the men had rigged up this defense wall of force. It meant they would have an alarm system—and they would swoop down every corridor in an organized attempt to corner him.

Xtl's eyes were glowing pools of white fire as he realized the opportunity. He must catch one of these men, while they were scattered, investigate his gun properties, and use him for his first gun.

No time to waste. He darted into the nearest wall, a tall, gaudy, ungraceful streak, and, without pausing, sped through room after room, roughly parallel to a main corridor. His sensitive feet caught the vibrations of the approaching men; and through the wall his full vision followed the blurred figures rushing past. One, two, three, four—five—on this corridor. The fifth man was some distance behind the others.

Like a wraith, Xtl glided into the wall just ahead of the last man—and pounced forth in an irresistible charge. A rear-

ing (frightful shape of glaring eyes and ghastly mouth, blood-red, metal-hard body, and four arms of fire that clutched with bitter strength at the human body.

The man tried to fight. His big form twisted, jerked; his lashing fists felt vaguely painful as they pounded desperately against the hard, sheeny crust of Xtl's body. And then, by sheer weight and ferocity, he was overwhelmed; the force of his fall jarring Xtl's sensitive frame.

The man was lying on his back, and Xtl watched curiously as the mouth opened and shut spasmodically. A tingling sensation sped along Xtl's feet, and his mouth opened in a snarl. Incapable though he was of hearing sounds, he realized that he was picking up the vibrations of a call for help.

He pounced forward, one great hand smashing at the man's mouth. Teeth broke, and crushed back into the throat. The body sagged. But the man was still alive, and conscious, as Xtl plunged two hands into the feebly writhing body.

The man ceased suddenly even that shadow of struggle, his widened eyes staring at the arms that vanished under his shirt, stirred around in his chest, stared in petrified terror at the monstrous blood-red cylindrical body that loomed over him, with its round bright eyes glaring at him as if they would see right through him.

It was a blurred picture the frantic Xtl saw. The inside of the man's body seemed solid flesh. He had to find an open space, or one that could be pressed open, so long as the pressing did not kill the man. He must have living flesh.

Hurry, hurry— His feet registered the vibrations of approaching footsteps—from one direction only, but coming swiftly, swiftly.

And then, just like that, it was all over. His searching fingers, briefly hardened to a state of semisolidity, touched the heart. The man heaved

convulsively, shuddered, and slumped into death.

The next instant, Xel discovered the stomach. For a moment, black dismay flooded him. Here was what he was searching for, and he had killed it, rendered it useless! He stared in cold fury at the stilled body, uncertain, alarmed.

Then suddenly his actions became deliberate, weighted with contempt. Never for an instant had he suspected these intelligent beings would die so easily. It changed, simplified everything. There was no need to be anything more than casually careful in dealing with them.

Two men with drawn ato-guns whipped around the nearest corner, and slid to a halt at the sight of the apparition that snarled at them across the dead body. Then, as they came out of their brief paralysis Xel stepped into the nearest wall, a blur of scarlet in that brightly lit corridor, gone on the instant. He felt the fury of the energy rays that tore futilely at the metal behind him.

His plan was quite clear now. He would capture half a dozen men, and make gwaals of them. Then kill all the others, proceed on to the galactic system toward which the ship was heading, and take control of the first inhabited planet. After that, domination of the entire universe would be a matter of a short time only.

COMMANDER MORTON stood very stiffly there in the gleaming corridor, every muscle in his huge body like a taut wire. Only a dozen men were gathered round the dead body, but the audio-scopes were on; nearly two hundred tense men throughout the ship were watching that scene. Morton's voice was only a whisper, but it cut across the silence like a whiplash.

"Well, doctor?"

Dr. Eggert rose up from his kneeling position beside the body, frowning.

"Heart failure."

"Heart failure!"

"All right, all right!" The doctor put up his hands as if to defend himself against physical attack. "I know his teeth look as if they've been smashed back into his brain, and I know Darjeeling's heart was perfect, but heart failure is what it looks like to me."

"I can believe it," a man said sourly. "When I came around that corner, and saw that thing, I nearly had heart failure myself."

"We're wasting time!" von Grossen's voice stabbed from behind Morton. "We can beat this fellow, but not by talking about him, and feeling sick every time he makes a move. If I'm next on the list of victims, I want to know that the best damned bunch of scientists in the system are not crying over my fate, but putting their best brains to the job of avenging my death."

"You're right," Smith said. "The trouble with us is, we've been permitting ourselves to feel inferior. He's only been on the ship about an hour but I can see now that some of us are going to get killed. Well, I accept my chance! But let's get organized for combat!"

Morton snapped: "Pennons, here's a problem. We've got about two square miles of wall and floor space in our twenty levels. How long will it take to energize every inch of it?"

The chief engineer stared at him, aghast; then answered swiftly: "I could sweep the ship and probably wreck it completely within an hour. I won't go into details. But uncontrolled energization is absolutely out. It would kill every living thing aboard—"

"Not everything!" von Grossen rejected. "Not the creature. Remember, that damn thing ran into a wall of force. Your instrument, Pennons, registered activity for several seconds. Several seconds! Let me show you what that means. The principle underlying his ability to slip through walls

is simple enough. The atoms of his body slide through the empty spaces between the atoms of the walls. There is a basic electronic tension that holds a body together, which would have to be overcome, but apparently his race has solved the difficulty. A wall of force would increase those electronic tensions to a point where the atoms themselves would be emitting free electrons; and, theoretically, that should have a deadly effect on any interfering body. I'll wager he didn't like those few seconds he was in the wall—but the point is, he stood them."

Morton's strong face was hard: "You could feed more energy to those walls, couldn't you, Pennons?"

"N-no!" said Pennons reluctantly. "The walls couldn't stand it. They'd melt."

"The walls couldn't stand it!" a man gasped. "Man, man, do you know what you're making this creature out to be?"

Morton saw the consternation that leaped along that line of stern faces. Korita's thin, clear voice cut across that pregnant silence:

"Let us not forget, my honorable friends, that he did blunder into the wall of force, and recoiled in dismay, though apparently without damage to his person. I use the word 'blunder' with discretion. His action proves once again that he does make mistakes which, in turn, shows him to be something less than a superbeing—"

"Suppose," Morton barked. "he's a peasant of his cycle. What would be his chief intellectual characteristic?"

Korita replied almost crisply for one who usually spoke so slowly: "The inability to understand the full power of organization. He will think probably that all he has to fight in order to get control of this ship would be the men who are in it. His most instinctive reasoning would tend to discount the fact that we are part of a vast galactic

civilization or organization, and that the spirit of that civilization is fighting in us. The mind of the true peasant is very individualistic, almost anarchic. His desire to reproduce is a form of egoism, to have his own blood particularly carried on. There can be no such thing as a peasant co-operative or organization. But this creature may want to have numbers of beings similar to himself beside him to help him with his fight. But, though there would be a loose union, they would fight as individuals, and not as a group."

"A loose union of those fire-eaters ought to be enough!" a crew member commented acidly. "I . . . a-a-a-a—"

His voice sagged. His lower jaw dropped two inches. His eyes, under Morton's gaze, took on a horribly goggled stare. The commander whipped around with an oath.

Xtl stood near, forbidding specter from a scarlet bell, his eyes pools of blazing alertness. He knew with a vast contempt that he could plunge into the nearest wall before any gun could leap out at him in ravening fury. But he felt himself protected by another fact. These were intelligent beings. They would be more anxious to discover why he had deliberately come out of the wall than to kill him immediately. They might even consider it a friendly move; and, when they discovered differently, it would be too late.

His purpose, which was twofold, was simplicity itself. He had come for his first goal. By snatching that goal from their very midst, he would demoralize them thoroughly.

Morton felt a curious wave of unreality sweep over him, as he stood just behind von Grossen there in that glittering hallway, facing the tall, thick, cylindrical reality of Xtl. Instinctively, his fingers groped downward toward the sparkling, translucent handle of the ato-gun that protruded from his holster.

He stopped himself, and said in a steady voice:

"Don't touch your guns. He can move like a flash; and he wouldn't be here if he thought we could draw on him. I'll take his opinion any day on that point. Besides, we can't risk failure. This may be our only chance!"

He continued in a swift, slightly higher, more urgent tone: "Every man listening in on the audioscopes get above and below and around this corridor. Bring up the heaviest portables, even some of the semiportables and burn the walls down. Cut a clear path all around this area, and have your beams sweep that space at narrow focus. Move!"

"Good boy, Morton!" Pennons' face appeared for an instant on the plate of the audioscope. "We'll be there—if you can stall that hellhound three minutes."

Korita's sibilant voice hissed out of the audioscope: "Morton, take this chance, but do not count on success. Notice that he has appeared once again before we have had time for a discussion. He is rushing us, whether intentionally or accidentally matters not, because the result is that we're on the run, scurrying this way and that, futilely. So far we have not clarified our thoughts. I am convinced the vast resources of this ship can defeat any creature—any single creature—that has ever existed, or that ever will exist, but only if we have time to use them—"

His voice blurred briefly in Morton's ears. Von Grossen had taken a notebook from his pocket, and was sketching rapidly. He tore the sheet loose, and stepped forward, handed it to the creature, who examined it curiously.

Von Grossen stepped back, and began to sketch again on the second page, with a swift deftness. This sheet he handed also the creature, who took one glance at it, and stepped back with a snarl that split his face. His eyes widened to blaring pools; one arm half reached forward

toward von Grossen, then paused uncertainly.

"What the devil have you done?" Morton demanded his voice sounding unnaturally shrill even to himself.

VON GROSSEN took several steps backward, until he stood level with Morton. To the commander's amazement, he was grinning:

"I've just shown him," the German physicist said softly, "how we can defeat him—neutronium alloy, of course and he—"

Too late. Morton stepped forward, instinctively trying to interpose his huge form in front of von Grossen. A blur of red swept by him. Something—a hand—moving so fast that it was invisible—struck him a stunning blow, and knocked him spinning against the nearest wall. For an instant, his body threatened to collapse from sheer, dazed weakness. The world went black, then white, then black.

With appalling effort, he fought the weakness aside. The immense reservoir of strength in his magnificent body surged irresistibly forward; his knees stopped wavering, but his vision was still a crazy thing. As through a distorted glass, he saw that the thing was holding von Grossen in two fire-colored arms. The two-hundred-and-ten-pound physicist gave one convulsive heave of dismay; and then seemed to accept the overpowering strength of those thin, hard muscles.

With a bellow, Morton clawed for his gun. And it was then that the maddest thing of all happened. The creature took a running dive, and vanished into the wall, still holding von Grossen. For an instant, it seemed to Morton like a crazy trick of vision. But there was only the smooth gleamingness of the wall, and eleven staring, perspiring men, seven of them with drawn weapons, which they fingered helplessly.

"We're lost!" a man whispered. "If

he can adjust our atomic structure, and take us through walls, we can't fight him."

Morton chilled his heart to the dismay he read in that rough semicircle of faces. He said coldly:

"Your report, Penmons?"

There was a brief delay, then the engineer's lean leathery face, drawn with strain and effort, stared into the plate: "Nothing!" he replied succinctly. "Clay, one of my assistants, thinks he saw a flash of scarlet disappearing through a floor, going down. That's a clue of course. It means our search will be narrowed to the lower half of the ship. As for the rest, we were just lining up our units when it happened. You gave us only two minutes. We needed three!"

Morton nodded, his thoughtful mood interrupted by the abrupt realization that his fingers were shaking. With a muttered imprecation, he clenched them, and said icily:

"Korita has given us our cue—organization. The implications of that word must be fully thought out, and co-ordinated to the knowledge we have of the creature. Von Grosse, of course, has given us our defense—neutronium alloy."

"I don't follow the argument," interjected Zeller, the metallurgist.

It was Smith who explained: "The commander means that only two parts of the ship are composed of that incredibly dense metal, the outer shell and the engine room. If you had been with us when we first captured this creature, you would have noticed that, when the damned thing fell through the floor of the cage, it was stopped short by the hard metal of the ship's crust. The conclusion is obviously that it cannot slip through such metal; and the fact that it ran for the air-lock is proof. The wonder is that we didn't think of it before."

Morton barked: "Therefore, to the

heart of the ship—the engine room. And we won't go out of there till we've got a plan. Any other way, he'll run us ragged."

"What about von Grosse?" a man ventured.

Morton snapped harshly: "Don't make us think of von Grosse. Do you want us all to go crazy?"

IN THAT vast room of vast machines, the men were dwarfs in gigantic. It was a world apart; and Morton, for the first time in years, felt the alien, abnormal tremendousness of it. His nerves jumped at each special burst of unholy blue light that sparkled and coruscated upon the great, glistening sweep of the ceiling. Blue light that was alive, pure energy that no eliminators had ever been able to eliminate; no condensers absorb.

And there was something else that sawed on his nerves now. A sound—imprisoned in the very air! A thin beam of terrifying power, a vague rumble, the faintest, quivering reverberation of an inconceivable flow of energy.

Morton glanced at his watch, and stood up with an explosive sigh of relief. He swept up a small sheaf of notes from a metal desk. The silence of unsmiling men became the deeper, tenser silence of men who fixed him with their eyes. The commander began:

"This is the first breathing spell we've had since that creature came aboard less than—incredible as it may seem—less than two hours ago. I've been glancing through these notes you've given me, and I've divided them into two sections: those that can be discussed while we're putting into effect the purely mechanical plans for cornering the thing—these latter must be discussed now. There are two. First, Zeller!"

The metallurgist stepped forward, a brisk, middle-aged, young-looking man. He started: "The creature made no at-

tempt to keep the drawings which von Grossen showed it—proof, incidentally, that von Grossen was not seized because of the drawings. They fell on the floor; and I picked them up. I've been showing them around, so most of you know that the first drawing is a likeness of the creature stepping through a metal wall; and beside the wall is an enlarged atom system of the type of which the wall is composed—two hundred electrons arranged about the nucleus, forming a series of triangles.

"The second picture was a rough, unfinished but unmistakable single atom of neutronium alloy, with only eight hundred of the forty thousand electrons showing, but the design of each eighty electrons with their sixteen sides clearly indicated. That kind of language is intergalactic; and the creature understood the point instantly. He didn't like it, as we all saw by his actions; but apparently he had no intention of being thwarted; and perhaps saw the difficulty we might have in using such knowledge against him. Because, just as we cannot energize the walls of the whole ship—Pennons has said it would take days—so we have no materials to plate the ship throughout with neutronium alloy. The stuff is too rare.

"However, we have enough for me to build a suit of space armor, with which one of us could search for von Grossen, whom the thing is obviously hiding behind some wall. For the search, naturally, we'd use a fluorite camera. My assistant is already working out the suit, but we'd like suggestions—"

There were none; and, after a moment, Zeller disappeared into the machine shops adjoining the engine room. Morton's grim face relaxed slightly.

"For myself, I feel better knowing that, once the suit is built—in about an hour—the creature will have to keep moving von Grossen in order to prevent us from discovering the body. It's good to know that there's a chance of getting

back one of the boldest minds aboard the ship."

"How do you know he's alive?" a man asked.

"Because the creature could have taken Darjeeling's dead body, but didn't. He wants us alive—Smith's notes have given us a possible clue to his purpose, but let that go now. Pennons, outline the plan you have—this is our main plan, gentlemen; and we stand or fall by it."

THE chief engineer came forward; and it worried Morton to note that he was frowning blackly. His usually dynamic body lacked briskness and suggested uncertainty. The implications of the lack of confidence were mind-shaking. The mechanical wizard, the man who knew more about energy and its practical application than any other living human being—this man unsure of himself—

His voice added to Morton's dismay. It held a harsh, nasal tone that the commander had never heard from him in all the years he had known the man.

"My news isn't pleasant. To energize this ship under a controlled system would require about a hundred hours. There are approximately two square miles of floors and walls, mostly walls. And of course; as I said before, uncontrolled energization would be suicide.

"My plan is to energize the seventh level and the ninth, only the floors and not the walls. Our hope is this: so far the creature has made no organized attempt to kill us. Korita says that this is because he is a peasant, and does not fully realize the issues at stake. As a peasant he is more concerned with reproduction, though what form that is taking, and why he has captured von Grossen is a matter for our biologist. We know, as apparently he does not, that it's a case of destroy him, or he'll destroy us. Sooner or later, even a peasant will realize that killing us comes

first, before anything else, and from that moment we're lost. Our chance is that he'll delay too long—a vague chance, but we must accept it because it is based on the only analysis of the creature that we have—Korita's! If he doesn't interfere with our work, then we'll trap him on the eighth level, between the two energized floors."

Somebody interjected with a swift question: "Why not energize the seventh and eighth levels, so that he'll be in hell the moment he starts down?"

"Because"—Pennons' eyes glittered with a hard, unpleasant light—"when he starts down, he'll have one of us with him. We want that man to have a chance for life. The whole plan is packed with danger. It will take about an hour and a half to prepare the floors for energizing."

His voice became a harsh, grating sound: "And during that ninety minutes we'll be absolutely helpless against him, except for our heavy service guns. It is not beyond the bounds of possibility that he will carry us off at the rate of one every three minutes."

"Thirty out of a hundred and eighty!" Morton cut in with a chill incisiveness. "One out of every six in this room. Do we take the chance? Those in favor raise their hands."

He noted with intense satisfaction that not one man's hand but was raised.

THE REAPPEARANCE of the men brought Xtl up to the seventh level with a rush. A vague anxiety pushed into his consciousness, but there was no real sense of doubt, not even a shadow of the mental sluggishness that had afflicted him at first. For long minutes, he was an abnormal shape that fitted like some evil monster from a forgotten hell through that wilderness of walls and corridors.

Twice he was seen; and ugly guns flashed at him—guns as different from the simple action ato-guns as life from

death. He analyzed them from their effects, the way they smashed down the walls, and made hard metal run like water. Heavy duty electronic guns these, discharging completely disintegrated atoms, a stream of pure electrons that sought union with stable matter in a coruscating fury of senseless desire.

He could face guns like that, but only for the barest second would the spinning atom system within his body carry that intolerable load. Even the biologists, who had perfected the Xtl race, had found their limitations in the hot, ravaging energy of smashed atoms.

The important thing was: "What were the men doing with such determination? Obviously, when they shut themselves up in the impregnable engine room, they had conceived a plan—" With glittering, unwinking eyes, Xtl watched that plan take form.

In every corridor, men slaved over atomic furnaces, squat things of dead-black metal. From a hole in the top of each furnace, a white glare spewed up, blazing forth in uncontrollable ferocity at the ceilings; intolerable flares of living fire, dazzling almost beyond endurance to Xtl protected by a solid metal wall as well as by his superlatively conditioned body.

He could see that the men were half dazed by the devastating whiteness that beat against their vision. They wore their space armor with the ordinary transparent glassite electrically darkened. But no light metal armor could ward off the full effect of the deadly rays that sprayed, violent and untamed, in every direction.

Out of the furnaces rolled long dully glowing strips of some material, which were instantly snatched into the maw of machine tools, skillfully hacked into exactly measured sections, and slapped onto the floors. Not an inch of floor, Xtl noticed, escaped being inclosed in some way or another by these strips. And the moment the strips were laid,

massive refrigerators bugged close to them, and froze the heat out of them.

His mind refused at first to accept the result of his observations. His brain persisted in searching for deeper purposes, for a cunning of vast and not easily discernible scope. Somewhere there must be a scheme that would explain the appalling effort the men were making. Slowly, he realized the truth.

There was nothing more. These beings were actually intending to attempt the building of walls of force throughout the entire ship under a strict system of controls—anything less, of course, was out of the question. They could not be so foolish as to think that a partial energization could have the faintest hope of success. If such hope smoldered, it was doomed to be snuffed out.

And total energization was equally impossible. Could they not realize that he would not permit such a thing; and that it would be a simple matter to follow them about, and tear loose their energization connections?

IN COLD CONTENTMENT, Xtl dismissed the machinations of the men from his mind. They were only playing into his hands, making it easier for him to get the goods he still needed.

He selected his next victim as carefully as he had selected von Grosse. He had discovered in the dead man—Darjoeling—that the stomach was the place he wanted; and the men with the largest stomachs were automatically on his list.

The action was simplicity itself. A cold, merciless survey of the situation from the safety of a wall, a deadly swift rush and—before a single beam could blaze out in sullen rage—he was gone with the writhing, struggling body.

It was simple to adjust his atomic structure the instant he was through a ceiling, and so break his fall on the floor beneath; then dissolve through the

floor onto the level below in the same fashion. Into the vast hold of the ship, he half fell, half lowered himself.

The hold was familiar territory now to the sure-footed tread of his long-toed feet. He had explored the place briefly but thoroughly after he first boarded the ship. And the handling of von Grosse had given him the exact experience he needed for this man.

Unerringly, he headed across the dimly lit interior toward the far wall. Great packing cases piled up to the ceiling. Without pause, he leaped into them; and, by dexterous adjustment of his structure, found himself after a moment in a great pipe, big enough for him to stand upright—part of the miles of air-conditioning pipes in the vast ship.

It was dark by ordinary light, but to his full vision a vague twilight glow suffused the place. He saw the body of von Grosse, and deposited his new victim beside the physicist. Carefully now, he inserted one of his slender hands into his own breast; and removed one precious egg—deposited it into the stomach of the human being.

The man had ceased struggling, but Xtl waited for what he knew must happen. Slowly, the body began to stiffen, the muscles growing rigid. The man stirred; then, in evident panic, began to fight as he realized the paralysis that was stealing over him. But remorselessly Xtl held him down.

Abruptly, the chemical action was completed. The man lay motionless, every muscle stiff as a rock, a horrible thing of taut flesh.

There were no doubts now in Xtl's mind. Within a few hours, the eggs would be hatching inside each man's stomach; and in a few hours more the tiny replicas of himself would have eaten themselves to full size.

Grimly complacent, he darted up out of the hold. He needed more hatching places for his eggs, more goods.

ON THE ninth level now, the men slaved. Waves of heat rolled along the corridor, a veritable inferno wind; even the refrigeration unit in each spacesuit was hard put to handle that furious, that deadly blast of superheated air. Men sweated in their suits, sick from the heat, dazed by the glare, laboring almost by instinct.

At last, Morton shut off his own furnace. "Thank Heaven, that's finished!" he exclaimed; then urgently: "Pennons, are you ready to put your plan into effect?"

"Ready, aye, ready!" came the engineer's dry rasp of a voice on the communicators. He finished even more harshly: "Four men gone and one to go. We've been lucky—but there is one to go!"

"Do you hear that, you specchounds!" Morton barked. "One to go. One of us will be bait—and don't hold your guns in your hands. He must have the chance at that bait. Kellie, elaborate on those notes you gave me before. It will clear up something very important, and keep our minds off that damned thing."

"Er!" The cracked voice of the sociologist jarred the communicators. "Er, here is my reasoning. When we discovered the thing it was floating a million light-years from the nearest system, apparently without means of spatial locomotion. Picture that appalling distance, and then ask yourself how long it would require for an object to float it by pure chance. Gunlie Lester gave me my figures, so I wish he would tell you what he told me."

"Gunlie Lester speaking!" The voice of the astronomer sounded surprisingly brisk. "Most of you know the prevailing theory of the beginnings of the present universe: that it was formed by the disintegration of a previous universe several million million years ago, and that a few million million years hence our universe will complete its cycle

in a torrent of explosions, and be replaced by another, which will develop from the maelstrom. As for Kellie's question, it is not at all impossible; in fact, it would require several million million years for a creature floating by pure chance to reach a point a million light-years from a planet. That is what you wanted, Kellie?"

"Er, yes. Most of you will recall my mentioning before that it was a paradox that a pure sympodial development, such as this creature, did not populate the entire universe. The answer is that, logically, if his race should have controlled the universe, then they did control it. We human beings have discovered that logic is the sole stable factor in the all; and we cannot shrink even from the most far-reaching conclusions that the mind may arrive at. This race did control the universe, but it was the previous universe they ruled, not our present one. Now, naturally, the creature intends that his race shall also dominate this universe."

"In short," Morton snapped, "we are faced with the survivor of the supreme race of a universe. There is no reason to assume that they did not arrive at our present level of progress any later than we did; and we're still got several million million years to go before our universe crashes into flaming death. Therefore, they are not only billions of years ahead of us, but millions of millions of years." His voice took on a strained note: "Frankly, it scares me. We're not doing enough. Our plans are too sketchy. We must have more information before we can hope to win against such a super-human monster. I'm very much afraid that—"

The shrill scream of a man protruded horribly into his words, and there came a gurgling—"got me . . . quick . . . ripping me out of my suit—"

The voice collapsed; and somebody shouted in frank dismay: "Good Heaven! That was Dack, my assistant!"

THE WORLD of ship became, for Morton, a long, shining corridor that persisted in blurring before his eyes. And it was suddenly as if he were looking, not out at it, but down into its depths—fearsome depths that made his brain reel.

Ages seemed to pass. But Morton, schooled now to abnormal calm, knew that only fractions of seconds were dragging by. Just as his nerves threatened to break, he heard a voice, Pennons' voice, cool, steady, yet almost unrecognizable:

"One!" said Pennons; and it sounded absolute mumbo-jumbo in that moment when out there another man was going through a hell of fear and torment.

"Two!" said Pennons, cold as ice.

Morton found himself staring curiously at his feet. Sparkling, brilliant, beautiful blue fire throbbed there. Little tendrils of that gorgeous flame reared up hungrily a few inches from his suit, as if baffled by some invisible force protecting the suit.

There was a distinct click in Morton's mind. Instantly, his brain jumped to full gear. In a flash of thought, he realized that Pennons had energized floors seven and nine. And that it was blue ferocity of the energization that was struggling to break through the full-driven screens of his space armor.

Through his communicators came the engineer's hiss of indrawn breath: "If I'm right," Pennons almost-whispered, all the strength gone from his voice, "we've now got that—devil—cornered on the eighth floor."

"Then," barked Morton efficiently, "we'll carry on according to plan. Group one, follow me to the seventh floor."

The men behind Morton stopped short as he halted abruptly at the second corner. Sickly, he went forward, and stood staring at the human body that sagged against the floor, pasted to the metal by almost unbearably brilliant fin-

gers of blue fire. His voice, when he spoke, was only a whisper, but it cut across the strain of silence like a whip-lash:

"Pull him loose!"

Two men stepped gingerly forward, and touched the body. The blue fire leaped ravenously at them, straining with futile ferocity to break through the full-driven defense screens of their suits. The men jerked, and the unholy bonds snapped. They carried the body up the nearest stairs to the unenergized eighth level. The other men followed silently, and watched as the body was laid on the floor.

The lifeless thing continued to kick for several minutes, discharging torrents of energy, then gradually took on the quietness of natural death.

"I'm waiting for reports!" Morton said stiffly into his communicators.

Pennons' voice came. "The men are spread out over the eighth floor according to plan, taking continuous pictures with fluoride cameras. If he's anywhere on the floor, we'll get a picture of his swift-moving body; and then it will be a matter of energizing the floor piecemeal. It'll take about thirty minutes yet—"

And finally the report came: "Nothing!" Pennons' voice held an incredulous note tinged with dismay. "Morton, he's not here. It can only mean that he passed through the energized floor as easily as through ordinary metal. We know he must have gone through it because Duck's dead body was on this side."

Somebody said hopelessly: "And now what are we going to do?"

Morton didn't answer. It struck him abruptly, with a shock that tore away his breath, that he had no answer.

THE SILENCE in that shiping corridor was a form of death. It pressed against Morton, a queer, murky, lightless thing. Death was written too in the faces that



"It can't get through the engine room walls—but we can't get out either. Somehow, we've got to get that beast—"

blurred around him, the cold, logical death expectancy of men who could see no way out.

Morton broke the silence: "I am willing to accept von Grossen's analysis of how the thing passes through metal. But he intimated the creature recoiled from the energized wall. Can anyone explain then—how?"

"Zeller speaking!" The brisk voice of the metallurgist came through the communicators. "I've finished the neutronium-alloy suit, and I've started my search at the bottom of the ship—I heard your question, Morton. To my mind, we missed one point the first time the creature struck the wall of force: The point is that he was in it. And what basic difference is there between being partially inside the wall, and actually passing through? He could pass through in less than a second. The first time, he touched the wall for several seconds, which probably means that, in his surprise, he recoiled and lost his balance. That must have made his position very unpleasant. The second time, however, he simply released poor Deck and passed on through with a minimum of discomfort."

"Hm-m-m!" Morton pondered. "That means he's still vulnerable to walls of force, provided we could keep him inside one for a long enough time. And that would mean complete energization of the ship which, in turn, would depend on his allowing us to make the connections without interference. I think he would interfere. He let us get away with energizing the two floors because he knew it didn't mean anything—and it gave him a good opportunity to kidnap some more men. Fortunately, he didn't grab off as many as we expected, though Heaven help those four."

Smith said grimly, his first words in a long time: "My firm opinion is that anything that would require more than two hours to complete will be fatal. We

are dealing with a creature who has everything to gain by killing us, and obtaining control of the ship. Zeller, how long would it take to build neutronium-alloy suits for every man on this ship?"

"About two hundred hours," the metallurgist replied coolly, "mainly because I used up nearly all the available alloy for this one suit. We'd have to break down the walls of the ship, and build the alloy from an electronic base. We're not in the habit of carrying a lot of metal on this ship, as you know, because there's usually a planet a few minutes from anywhere. Now, we've still got a two weeks' trip either way."

"Then that's out!" frowned Smith blackly. He looked stunned. "And since the complete energization is out—we've got nothing else."

The usually lary voice of Gourlay, the communications chief, snapped: "I don't see why those ways are out. We're still alive; and I suggest we get to work, and do as much as we can as soon as we can—everybody working first at making suits for the men who go out to prepare the walls for energizing. At least, that will protect them from being kidnaped."

"What makes you think," Smith asked coldly, "that the creature is not capable of smashing down neutronium alloy? As a superior being, his knowledge of physics should make it a simple matter for him to construct a beam that could destroy anything we have. Heaven knows there's plenty of tools lying in the various laboratories."

THE two men glared at each other with the flashing, angry eyes of men whose nerves have been strained to the utmost limit. Before Morton could speak, Korita's sibilant voice cut across the tense silence: "I am inclined to agree with Smith. We are dealing with a being who must now know that he cannot allow us time for anything important.

I agree with the commander when he says that the creature will interfere if we attempt to prepare the ship for complete controlled energization. The honorable gentlemen must not forget, however, that we are dealing with a creature whom we have decided is in the peasant stage of his particular cycle.

"Let me enlarge on that. Life is an ebb and flow. There is a full tide of glorious accomplishment, and a low tide of recuperation. For generations, centuries, the blood flows in the peasant, turgid, impure, gathering strength from the soil; and then it begins to grow, to expand, reaching finally for the remotest stars. At this point, amazingly enough, the blood grows weary; and, in this late megapolitan era, men no longer desire to prolong their race. Highly cultivated people regard having children as a question of pros and cons, and their general outlook on life is tinged with a noble skepticism.

"Nature, on the other hand, knows nothing of pro and con. You cannot reason with a peasant—and he cannot reason except as a peasant. His land and his son, or—to put a higher term to it—his property and his blood are sacred. If a bourgeoisie court orders him off his land, he fights blindly, ignorantly, for his own. It matters not to him that he may have accepted money for a mortgage. He only knows they're trying to take his property, to draw his roots from the soil where his blood has been nourished.

"Honorable sirs, here is my point: This creature cannot begin to imagine anyone else not feeling about his patch of home—his own property the way he does.

"But we . . . we can make such a sacrifice without suffering a spiritual collapse."

Every muscle in Morton's body grew taut, as he realized the implications. His exclamation was almost a whisper: "Korita, you've got it! It means sacri-

ficing von Grossen and the others. It means sacrifice that makes my brain reel, but property is not sacred to us. And as for von Grossen and the other three"—his voice grew stern and hard, his eyes wide with a chill horror—"I didn't tell you about the notes that Smith gave me. I didn't tell you because he suggested a possible parallel with a certain species of wasp back home on the earth. The thought is so horrible that I think instantaneous death will come as a release to these bold men."

"The wasp!" A man gasped. "You're right, Morton. The sooner they're dead the better!"

"Then," Morton cried, "to the engine room. We—"

A swift, excited voice clamored into his communicators; it was a long second before he recognized it as belonging to Zeller, the metallurgist:

"Morton—quick! Down to the hold! I've found them—in the air-conditioning pipe. The creature's here, and I'm holding him off as best I can. He's trying to sneak upon me through the walls. Hurry!"

Morton snapped orders with machine-gun precision, as the men swarmed toward the elevators: "Smith, take a dozen men and get Kent down from the bedrooms to the engine room. I'd almost forgotten about him and his broken leg! Pennons, take a hundred men to the engine room and make the preparations to carry out Korita's plan. The rest take the four heavy freight elevators and follow me!"

He finished in a ringing voice: "We won't kill him in the hold of course, unless he's gone stark mad. But the crisis has come! Things are breaking our way at last. And we've got him! We've got him!"

Xrl retreated reluctantly, sullenly, as the men carried off his four goals. The

first shrinking fear of defeat closed over his mind like the night that brooded beyond the inclosing walls of the ship. His impulse was to dash into their midst, a whirlwind of ferocity, and smash them. But those ugly, glittering weapons congealed that wild rage.

He retreated with a dismaying sense of disaster, conscious that he had lost the initiative. The men would discover his eggs now; and, in destroying them, would destroy his immediate chances of being reinforced by other Xtl's. And, what was more, they were temporarily safe in the engine room.

His brain spun into a cold web of purpose. From this moment, he must kill, and kill only. It seemed suddenly incredible that he had thought first of reproduction, with everything else coming secondary, even his every other thought blurred by that subordination to his one flaming desire.

His proper action was preternaturally clear now. Not to get his goals first, but to kill these dangerous enemies, to control the ship, then head for the nearest inhabited planet, where it would be a simple matter to find other, more stupid goals.

To kill he must have an irresistible weapon, one that could smash—anything! And valuable time had already been wasted. After a moment's thought, he headed for the nearest laboratory, conscious of a burning urgency, unlike anything he had ever known.

As he worked—tall, nightmare body and hideous face bent intently over the gleaming metal of the queer-shaped mechanism—his sensitive feet grew aware of a difference in the symphony of vibrations that throbbed in discordant melody through the ship.

He paused, straightened, alert and tense; and realized what it was. The drive engines were silent. The monster ship of space had halted in its head-

long flight, and was lying quiescent in the black deeps.

An abrupt, indefinable sense of urgency came to Xtl—an icy alarm. His long, black, wirelike fingers became flashing things as he made delicate connections, dently and frantically.

Suddenly, he paused again. Through his brain pulsed a distinct sensation of something wrong, dangerously, desperately, terribly wrong. The muscles of his feet grew taut with straining. Abruptly, he knew what it was.

He could no longer feel the vibrations of the men. *They had left the ship!*

Xtl whirled from his nearly finished weapon, and plunged through the nearest wall. He knew his doom with a burning certainty that found hope only in the blackness of space.

Through deserted corridors he fled, slaving slit-faced hate, scarlet monster from ancient, incredibly ancient Glor. The gleaming walls seemed to mock him. The whole world of the great ship, which had promised to much, was now only the place where sudden intolerable hell would break loose in a devastating, irresistible torrent of energy.

He saw the air lock ahead—and flashed through the first section, then the second, the third—then he was out in space. There was a sense of increasing lightness as his body flung by momentum darted from the side of the ship, out into that blackest of black nights.

For a brief instant, his body glinted and flashed a startling scarlet, reflecting the dazzling light from the row on row of brilliant portholes.

The queerest thing happened then. The porthole lights snuffed out, and were replaced by a strange, unearthly blue glow, that flashed out from every square inch of that dark, sweeping plain of metal.

The blue glow faded, died. Some of the porthole lights came on again, flickering weakly, uncertainly; and then, as mighty engines recovered from

that devastating flare of blue power, the lights already shining grew stronger. Others began to flash on.

Xtl was a hundred yards from the ship when he saw the first of the torpedolike craft dart out of the surrounding night, into an opening that yawned in the side of the mighty vessel. Four other dark craft followed, whipping down in swift arcs, their shapes blurred against the background of immensity, vaguely visible in the light that glowed now, strong and steady from the lighted portholes.

The opening shut; and—just like that—the ship vanished. One instant, it was there, a vast sphere of dark metal; the next he was staring through the space where it had been at a vague swirl of light, an enormous galaxy that swam beyond a gulf of a billion years.

Time dragged drearily toward infinity. Xtl sprawled motionless and mutterably hopeless on the bosom of endless night. He couldn't help thinking of the sturdy sons he might have had, and of the universe that was lost because of his mistakes. But it was the thought of the sons, of companionship, that really brought despair.

Morton watched the skilful fingers of the surgeon, as the electrified knife cut into the fourth man's stomach. The last egg was deposited in the bottom of the tall neutronium alloy vat.

The eggs were round, grayish objects, one of them slightly cracked.

As they watched, the crack widened; an ugly, round, scarlet head with tiny, beady eyes and a tiny slit of a mouth poked out. The head twisted on its short neck, and the eyes glittered up at them with a hard ferocity.

And then, with a swiftness that almost took them by surprise, it reared up and tried to run out of the vat, slid back—and dissolved into the flame that Morton poured down upon it.

Smith, licking his dry lips, said:

"Suppose he'd got away, and dissolved into the nearest wall!"

Nobody said anything. They stood with intent eyes, staring into the vat. The eggs melted reluctantly, under the merciless fire of Morton's gun, and then burned with a queer, golden light.

"Ah," said Dr. Eggert; and attention turned to him, and the body of von Grossen, over which he was bending. "His muscles are beginning to relax, and his eyes are open and alive. I imagine he knows what's going on. It was a form of paralysis-induced by the egg, and fading now that the egg is no longer present. Nothing fundamentally wrong. They'll all be O. K. shortly. What about the big fellow?"

Morton replied: "Zeller swears he saw a flash of red emerge from the main lock just as we swept the ship with uncontrolled energization. It must have been, because we haven't found his body. However, Pennons is out with half the men, taking pictures with fluorite cameras; and we'll know for certain in a few hours. Here he is now. Well, Pennons?"

The engineer strode in briskly, and placed a misshapen thing of metal on one of the tables. "Nothing definite to report yet—but I found this in the main physics laboratory. What do you make of it?"

Morton frowned down at the fragile-looking object with its intricate network of wires. There were three distinct tubes that might have been muzzles running into and through three small, round balls, that shone with a queer, silvery light. The light penetrated the table, making it as transparent as glass-ite. And, strangest of all, the balls irradiated, not heat, but cold.

Morton put his hands near, but the cold was of a mild, water-freezing variety, apparently harmless. He touched the metal ball. It felt as chilled metal might feel.

"I think we'd better leave this for our chief physicist to examine. Von Grosse ought to be up and around soon. You say you found it in the laboratory?"

Pennons nodded; and Merton carried on his thought: "Obviously, the creature was working on it, when he suspected that something was amiss—he must have suspected the truth, for he left the ship. That seems to discount your theory, Korita. You said that, as a true peasant, he couldn't even imagine what we were going to do."

The Japanese historian smiled faintly through the fatigue that paled his face. "Honorable commander," he said politely, "a peasant can realize destructive intentions as easily as you or I. What he cannot do is bring himself to destroy his own property, or imagine others destroying theirs. We have no such limitations."

Pennons groaned: "I wish we had. Do you know that it will take us three months at least to get this ship properly repaired after thirty seconds of uncontrolled energization. For those thirty seconds, the ship created a field in space millions of times more intense than the energization output. I was afraid that—"

He stopped with a guilty look. Merton grinned: "Go ahead and finish what you were going to say. You were afraid the ship would be completely destroyed. Don't worry, Pennons, your previous statements as to the danger involved made us realize the risks we were taking; and we knew that our lifeboats could only be given partial antiaccelera-

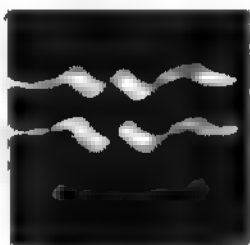
tion; so we'd have been stranded here a million years from home."

A man said, thoughtfully: "Well, personally, I think there was nothing actually to fear. After all, he did belong to another universe, and there is a special rhythm to our present state of existence to which man is probably attuned. We have the advantage in this universe of momentum, which, I doubt, a creature from any other universe could hope to overcome. And in the world of man there is no just place for a creature that can even consider laying its eggs in the living flesh of other sensitive beings. All other intelligent life would unite against such a distinctly personal menace."

Smith shook his head: "There is no biological basis for your opinion, and therefore it falls in the category of 'things darkly spoken are darkly seen.' It dominated once, and it could dominate again. You assume far too readily that man is a paragon of justice, forgetting apparently that he lives on meat, enslaves his neighbors, murders his opponents, and obtains the most wholly sadistical joy from the agony of others. It is not impossible that we shall, in the course of our travels, meet other intelligent creatures far more worthy than man to rule the universe."

"By Heaven!" replied the other, "no creature is ever getting on board this ship again, no matter how harmless he looks. My nerves are all shot; and I'm not so good a man as I was when I first came aboard the *Beagle* two long years ago."

"You speak for us all!" said Merton.



THUNDERING PEACE



By KENT CASEY

THUNDERING PEACE

Sergeant John West and Dr. von Theil are back—with an explanation of the mystery of the oxygen-breathing Uries!

By Kent Casey

Illustrated by [illegible]

"There's only one way to end this goofy war," John West insisted, gesturing with his sandwich. "We've soundly thrashed the Uranians every time we've found 'em abroad since Doc, here, found out how to make a cosmic-ray screen. As long, however, as we leave Uranus itself alone, they keep coming. They're using little speed-craft now instead of bruisers; and the minute a Terran freighter gets out of the patrolled lanes she's attacked. Q. E. D. We must attack Uranus and make 'em say 'Uncle.'"

"Fair enough!" assented Captain Mowbray. "That sounds logical, but it isn't. I've chased a lot of those babies home and it's always the same story. He leads me right up to his stratosphere, cuts his screen and dives like a bat out of hell for the ground. Sometimes I can get a hit before he's through, but mostly I can't. And if I try to follow into the stratosphere, all my instruments go haywire and the men do, too. There must be good air under that blanket, because we all know that Uranus was colonized by our own sort of people, and they can still breathe comfortably anywhere we can. And they couldn't do that if their atmosphere is methane, like the books say."

"Why don't a lot of you imitate the Uranians—dive through and fight 'em under the stratosphere?" asked Dr. von Theil.

"You can't maneuver when you're

using gravity nullifiers, especially with enough power to keep from crashing on Uranus. It has fifteen times the mass of Earth, you know. And if you land, you've got to wear a nullifier yourself in order to move at all and you'd be about as much use in a battle as a lamp-post," Mowbray explained.

"High altitude bombing!" West grunted.

"Yeah? When you can't see a darn thing through that gray cloudbank? Bombs enough to cover that big lun-mox of a planet would take more ships than we'll ever have. And sporadic bombing here and there might not hit a thing. If it did, it would just make the Uranians madder."

Von Theil leaned back in his chair, looking at the ceiling and patting his fingertips together. "Suppose you did know what you were shooting at; have you got bombs that would be reliable when released outside the stratosphere?" he asked.

"We-ell," West admitted reluctantly, "I wouldn't bet on 'em. They've got a lot of range in empty space, but I'm afraid they'd explode pretty high up in an atmosphere."

Mowbray nodded confirmation. "They can't stand much skin-friction," he said. "Moreover, they're built to attack a ship, and their force is concentrated in a pretty small area when they go off. I don't think they'd do much damage to

a city except by a lucky hit on a power line or a water main."

Von Theil seemed to find the ceiling interesting. "From what you say, I should think the things to bomb would be their atmosphere plants," he mused. The two soldiers turned suddenly. "Atmosphere plants?"

"Sure! We all know that the Uranians are oxygen breathers like us. CH_4 would do them no good. And the natural atmosphere of Uranus is—or, anyhow, used to be—plain CH_4 . We know that, too."

"But how—" West began.

Von Theil suddenly sat forward and brought his eyes down to face the two captains. "That's what we got to find out!" he said, smiling. "Now, you two stop your wishful thinking and tell me all you know about Uranians. I know they are very like us except for their tremendous bone and muscles. I know they look facially like some of our races. I hadn't heard that they are actually of Earth stock, however. That makes the problem simpler, but not simple enough yet. Who were they? When did they go?"

"As I remember, the first humans to go to Uranus were early in the twenty-first century—oil men, weren't they?" West said turning to Mowbray.

"Yes, but they didn't stay. They had a few small stations and worked in spacesuits. Working the big lakes of crude oil. Then the sickness came and the oil business had to be abandoned, even though they relieved the men every month or so."

"Sickness?" von Theil interrupted.

"Yes, something queer. All of a sudden, the men on duty in the stations began to get hysterical. Sometimes completely nuts. Visiting ships had to carry 'em out, every last man of them. Most of them had deep, stubborn burns, too, with nothing to account for them. In-

vestigators landed with all the precautions they could think of; but in a few hours they were as bad as the men they had rescued. So the oil is still there unless the present-day Uranians have used it up."

His eyes alight and his hands flat on the table, the little doctor was leaning forward eagerly. "And when did the present-day ones go? Who were they?"

"Remember the accounts of the Brigands' War in the twenty-first century? When all the outlaws of the world gathered in the countries where there were the fewest civilized men and started a rebellion? They really forced the formation of the Planetary government. It took all the decent people several years to quiet them. Well, they stopped raiding suddenly, and things were at a stalemate for nearly thirty years. Then all of a sudden they abandoned the Earth in a huge fleet of spaceships and went to Uranus. They stayed quiet there, too, until eight years ago when they attacked the Earth without warning."

Dr. von Theil was softly pounding one pudgy fist into the palm of the other hand. "And it was during the time of stalemate on Earth that the sickness came to Uranus, eh?"

Mowbray nodded in surprise. "Yes. That's what makes it puzzling. They didn't seem to be bothered by the sickness at all when they went to Uranus, although they were just as human then as we are. They hadn't even adjusted their bodies to the enormous gravity, and probably didn't for several generations."

"Do you remember the names of any of their leaders?" von Theil asked.

"Their military commander was named Gobelin or Gosselin or something like that. But the real leader was supposed to be an American professor who had got into some sort of trouble. Poisoned his wife or something. I can't think of his name. Began with an R?"

"Ritzbaden?" von Theil almost shouted.

"That's it. Ritzbaden. Why?"

The little doctor crowed with glee. "Now I've got it! Now I bet I know! Ritzbaden! The first man who got away from the silly old notion of trying to break down heavy elements to make lighter ones out of them. He worked the other way. He built up light elements into heavy ones. He was the first man, for instance, who made the manufacture of phosphorus from silicon commercially practicable. Now I know!"

He crammed the last of his sandwich into his mouth and gulped his coffee. "Come on, you two! We got to see the general right away!"

GENERAL BRUMBY was about to close his desk and start on his daily tour of inspection of the barracks and hangars when the trio, barely waiting for the orderly to announce them, entered his office. West and Mowbray remained silent at attention; but von Theil did not even spare the time to answer Brumby's "How d'ye do, doctor?"

"General," he cried, "I think I got it now, but I got to see something. Can I have John here and a little ship this afternoon?"

Long inured to the volatile little man's outbursts, the general betrayed no surprise. "What have you got, doctor? Maybe we can find a ship if it's necessary."

"I think I've got it. How to stop this foolish war. But I got to look at Uranus to make sure."

"Look at Uranus?"

"Of course. How else could I tell?"

Brumby's forehead wrinkled in a puzzled frown. "But, doctor, we can't land you on Uranus. We don't even try to enter that peculiar stratosphere of theirs; and the clouds make any long-range observation of the surface unreliable."

The little professor was dancing with

impatience. "P/ai!" he shouted. "Get a ship and rig your long-range view-plates with an infrared cloud-breaker ray. So simple even your young scientific men in the government laboratory can do it. This is important, general! Hurry!"

The two captains had frozen into expressionless immobility. The bewildered general looked up at them. "Do you gentlemen know what this is about?"

"No, sir," West replied. "Dr. von Theil was lunching with us and asked about the colonization of Uranus. When he heard it had been done by a man named Ritzbaden, he got excited and insisted on coming to you at once."

"Don't you see?" interrupted von Theil pleadingly. "The only way to make the Uranians behave is to find out just what methods they are using to overcome the methane. Then we can know how to counteract those methods, and, like John says, they will have to say 'Uncle.'"

After a brief stare, Brumby turned to his telephone. "Have an armed comet speedster on the ramp in thirty minutes," he directed. "Replace her usual far-vision gear with a cloud-breaker of, say, eight hundred miles range. No pilot needed. Just have the ship ready." He turned to the three with a gesture of outflung, resigned hands. "I'm coming along," he said. "West, tell Colonel Morrow to take over the desk until I return. You're on leave at present, aren't you, Captain Mowbray?"

"Yes, sir," Mowbray answered, "but my leave's up Friday. If you're going out to the blockade, I could rejoin my ship in a space-belt—"

Brumby chuckled. "Want to come, eh? I guess we can do better than that. Come along. We'll land you on your ship without making you body-dive for it."

"Ha!" cooed von Theil. "A party we will be, eh? Well, all right. Bring the

whole patrol if you want to, but let John fly. He does what I tell him."

"I take it," West said as the four scrambled through the little comet's airlock, "that you want to hurry, Doc?"

"Of course I want to hurry."

"Then, mister, you get into a pressure suit right now. I'm going to make this baby sizzle for you."

"Pressure suit? Inside the ship? Why?"

"Yep. You've talked hurry for the last hour and a half. Now you're going to get action, and it wouldn't do you a bit of good to have your whiskers wrapped around a chair back."

As the comet reeled through the sky, her very frames humming to the mighty thrust of her rockets, it was not the professor who gradually became worried. Gallantly refraining from interfering with West's navigation, the general moved silently about the ship, his eyes and ears cocked to the song of the tortured metals and his fingers groping for heated rivets. When the lights of the blockading fleet ringing the enemy planet caused West to slacken his terrific pace, the general's shoulders straightened. "My hat!" he exclaimed. "I thought you were going to yank the tubes out of her!"

Mowbray joined in West's laugh. "These comets are tough, general. They aren't the sleazy little packets we had to fly at the beginning of the war. You can spin 'em at that speed without doing much more than buckle a waistplate here and there."

"Hm-m-m!" was Brumby's reply. "I'm getting too old for stunt flying. I gup. What do you want West to do now, doctor?"

"Get down as close as he can and circle. Put out the spy-beam and everybody look for them."

"For what, doctor?"

Von Theil stared incredulously. "You don't get it yet? Well, for little inter-

mittent flashes on the ground like, say, artificial lightning going sidewise. Then maybe for ball-topped towers. Probably then for columns of force like vertical chimneys straight up a few miles."

West spoke under his breath to Mowbray. "Better man the gun, Dick. Close as we are, we may get a welcoming committee."

Then West snapped current into the spy-beam and threw it in a wide arc on the dense gray cloudbank below. "I'll give you a wide field first to look for your flashes, Doc. If you spot one, I'll concentrate so you can look for your towers easier."

For a few minutes as the cloud-breaker fought its way through the murk, little could be seen. Then, "There's a city, Doc. You want that?"

"Nix! Foolish! They wouldn't have anything so dangerous close to a city! Look at where it looks like prairies or maybe mountaintops. Do you think they want to invite the sickness again?"

Brumby looked up, a gleam of comprehension in his frosty eyes. "By jove! I begin to see daylight, doctor!"

"There you are—Sector A-16 on the board, Doc! Is that it?" West said suddenly. Faintly through the eerie illumination of the infrared beam appeared tiny coruscations on the surface of Uranus, flying like sparks between sphere-topped towers.

"That's it!" crowed von Theil. "That's one of them, anyhow. Don't get too close to it! The stratosphere ought to be poison right above it. Ah! Let's see— Yes, by golly, that makes it complete! Right alongside the towers! That is the final proof—the refrigerating plant. Ritzbaden! What a man! What a pity he had to kill his wife and run away. All that science wasted for making fighting foolishness!"

"Refrigeration?" the general asked.

"Sure Mike! For a healthy atmosphere, they got to have some helium, don't they?"

Mowbray, his eyes intent on his screen as he watched for possible Uranian gunboats, spoke over his shoulder. "I was a pretty bright little doctor myself before this cruel war made a space-pup out of me," he said. "I thought I knew some physics, but I can't make sense to all this. What's it about?"

"Not physics except to plant the apparatus, mister. Chemistry. Air. To breathe, you know. Like we got at home."

"I'll bite, too, Doc. You haven't taught me anything about that. Not even hot air," West added.

The little professor shook his head sadly. "This modern education!" he mourned. "They teach you everything but how to use what you ought to know. Listen, my children! The first oil men came here to get the crude oil. It didn't need anything but pumps. It lies in open lakes on the ground, eh? Well, no great building required there. Tow out a big caisson and dump it right side up on the ground. Two, three men can live in it for some weeks while they pump its hold full of oil. Comes the relief ship and drops another caisson and tows back the full one, eh?"

"That's right. Then they got sick."

"Sure Mike! Because it was getting too hot for the Brigands, and they didn't like living in equatorial Africa anyhow. So—they came out here. The people cooped up in the caissons don't see them. They don't leave their big drums except to connect the suction hose in space armor and duck back to start the pumps. The Brigands start their first station, then another and another. By and by they are getting results—in about twenty-five or thirty years, maybe, eh?"

"What kind of station, Doc? What results?"

Von Theil sighed patiently. "A picture might help. We'll try again. Look, big man, the atmosphere of Uranus then was methane. CH_4 . Now what is carbon's atomic weight?"

"Twelve points 0 one."

"So. They bombard the methane with alpha particles. They break up and rebuild the carbon atoms. Heavier. Carbon is No. 6 in the table. What is No. 7?"

"Nitrogen. Fourteen point 0-0-eight. I know that one, too."

"And No. 8?"

"Oxygen. Sixteen."

"And what is air?"

"Nitrogen and— Well, fry my hide! I see it now! They transmuted the carbon by building it up into nitrogen and oxygen, and the left-over hydrogen escaped upward. Must have a layer of it several times thicker than our upper layer."

"Yes," went on von Theil. "And, naturally, where there is so much crude oil there is bound to be natural gas. It's pretty cold, but not cold enough, so they freeze it a lot more and what do they get? Nitrogen, liquid, of course, liquid methane and helium. They let the helium and the nitrogen out into the air; and the frozen methane helps run the refrigerator, or else they turn it loose, too, and break it up, like they do the methane they had to start with."

Mowbray whistled softly under his breath. "And to think I graduated first at medical school! That's what the sickness was! The new nitrogen and oxygen and hydrogen would be intensely radioactive when it was first made. Radio-neuroses and X ray burns—that was the sickness, huh?"

Von Theil nodded. "It would take several years for it to become safe. They waited thirty, so you told me. Now they just have occasional plants to keep their air stable, and the new gases are shot high into the stratosphere so they lose their danger as they filter down through good air."

"So now," said Brumby grimly, "all we have to do is bomb one of their air plants and threaten the rest. Surrender or stife in methane, slowly. What a

choice! Doctor, I'm a hard-boiled old soldier and I don't mind blowing a man or a ship to chunks, but I'm glad I never thought of anything as hellish as that!"

VON THEIL's blue eyes widened in astonishment. "Why, no! I wouldn't do that, of course. Why not just tell 'em you know how to do it? They surely will have some sense then?" He looked, puzzled, from one to another of the officers.

"You don't know those Uranians, Doc," West said gently. "You can't tell 'em anything. They'd give us the horse laugh. We'd have to bomb an air plant, all right—maybe several before they would really begin to worry."

"Yes," Brumby took up the story. "we'd have to blow up several of their plants. The effect would not be immediate, and they would merely push their shipbuilding a bit, trying to drive the blockade away. But, meanwhile, the methane would be spreading and spreading. It wouldn't get to the cities for a long time, but it would hit first the most helpless ones—women and kids in the sparsely settled country nearest the plants. Don't you see?"

"They're tough citizens, professor," Mowbray added. "It will take something sudden and drastic and visible to make them knuckle under, and blowing up all the plants at once would be necessary. That would make Uranus the same old death trap it was before people came here."

The little doctor sank into a seat, his face troubled. "Hm-m-m! That would be too bad!" he said. "Nix to that!" He began pulling at his snowy sideburns and his forehead wrinkled in a portentous frown. "Bah!" he said under his breath. "I should have thought of that! Hm-m-m. There must be something—" He leaned back, closed his eyes and began to tap his fingers together. "Hm-m-m"—suddenly sitting up—"how

high is the hydrogen layer above ground?"

"I should say fifty or sixty miles."

"And it should be pretty deep—deeper than ours, eh? Lots of hydrogen freed in the air-making and most of it up there." He leaned forward with his hands on his knees and gazed fixedly into Brumby's face.

"How about a simultaneous storm all over the planet? Noise, probably very heavy rainfall, very exciting? Not so much damage. Maybe a fire here and there. And wind damage. Hm-m-m . . . yes . . . and cloudbursts, of course. That first. Then tell 'em that is a sample and do they want any more?"

"It would have to be a tolerably hefty show. Something not easily attributable to natural causes," Brumby replied.

"But if it is, then it might work?"

"If it was spectacular enough, it might make them think. Why, what are you thinking about?" For von Theil's round, pink face was shining joyously.

"About getting home in two little ships, instead of one, tomorrow. John can't fly but one. How about you?" And he turned to Mowbray. "Can you fly pretty good? Can you calculate a beam-curve?"

Mowbray glanced helplessly at his commander-in-chief. "I can fly," he said, "but you'll have to ask General Brumby—"

The general smiled. "Captain Mowbray is battle-pilot of Colonel Tilton's flagship," he said. "If you want to use him, we can get his leave extended a day or so, I imagine; that is, if he volunteers for this duty. He's officially on leave at present."

"Yes, sir, I'm volunteering," Mowbray answered eagerly.

"Fine! Good! Now, somebody fix my pressure suit and let's go home, now—the way we came," and von Theil again leaned back in his seat, frowning studiously and with eyes

closed. "Put me down as close to my laboratory as you can," he asked. "I got work to do tonight." The three officers, lips twitching with amusement, resumed their flight stations.

"Aye, aye, Doc!" West replied cheerfully, and set the little comet on her screaming course back to Earth.

"Think up just what you want to tell the Uranians tomorrow after the business is over," von Theil murmured drowsily. He leaned back comfortably and went to sleep.

HOWEVER, he was wide awake the morning following arrival at his laboratory and was at the flying field very early, the back seat of his cab filled with apparatus. "Easy with that!" he ordered. "It should be handled carefully. Those are strong tubes, but you might pop one and then maybe things will go wrong." He began to supervise the mounting of the machines in the two ships that lay ready in the cradles.

"Some sort of ray projector, huh?" commented West. What is it, Doc, an improved pebble-buster?"

"It looks like it, don't it? You wait and see. But you know you couldn't use my Dirac ray in the war zone. Not with your screen turned on. So, of course, this is different."

"What will these things do? And why two of 'em?"

"Well, I hope Captain Mowbray is pretty good at calculations. We aren't going to shoot at anything you can see. That's what makes it hard."

The two tiny ships did not race at such breakneck speed to Uranus on the second voyage. "All that pressure makes the eyes jump. We want good sighting when we get there," said the doctor. Once well clear, he kept a running conversation over the visor-screen with Mowbray in the other ship. "When we get there, you get an accurate hundred miles away from us at the same altitude above the surface, eh?"

"Right, doctor."

"Fine. I tell you some more then."

Warned by General Brumby, the blockade ships gave the two little craft a wide berth; but practically the entire fleet hung in a quadrant behind them, eagerly watching. Dr. von Theil's exploits were tradition now, and this was the first time most of the fleet had had opportunity to watch.

"His Ceres show was a honey," Colonel Tilton remarked to his chief of staff. "This time he's promised something to dazzle the whole planet, so the general says. I don't want to miss it."

From time to time, von Theil glanced uneasily into the screens as division after division of ships became visible. "Better tell all these people to keep well behind us," he warned. "Pfu! You'd think it was a football game!"

At last, after long searching of the instrument dials, the little doctor began to twist the small handwheel which controlled his ray projector. "Mr. Mowbray," he barked into his transmitter, "are you an accurate hundred miles from us?"

"Yes, sir," Mowbray answered. "Maybe ten yards either way. Not more."

"What's your altitude now in relation to Uranus?"

"One hundred and fifty miles as near as may be."

"Fine! Hold it there! Now train your ray dead ahead, but at an angle of sixty degrees to the ship-to-ship baseline and keep it there steady. Ready?"

"All set, doctor!"

"Then here we go!" and the little doctor pressed down the button of his instrument, slowly twisting his vernier as if searching for something. Up and down, he played his ray, like a whipping searchlight, and as he crossed and recrossed Mowbray's beam, brilliant flashes snapped and crackled.

"He's running down Mowbray's beam

looking for something. Do you know what he's after?" West whispered over his shoulder to the general.

"I'm not sure, but I think—"

THE SENTENCE was never finished. Uranus, which had been an enormous sphere covered with an almost solid gray cloudbank, became almost instantaneously a great ball of lambent blue flame with jets leaping high into outer space, and heavy con-
cessions could be detected deep in the stratosphere, glaring flashes like concentrated sheet lightning; and as the flames died away, swirling black rain clouds. Then these in turn cleared, and Uranus, divested of its cloud-blanket, showed plain in the visors, apparently every square mile drenched, but with forests and buildings smoking as if recently extinguished.

The little doctor smiled and looked at his watch. "Sixteen minutes," he giggled. "You can talk to 'em now, general. Was that storm good enough?"

The general, his face strained, was staring into the visor, setting magnification at maximum. "I can't talk to them now," he said grimly. "Look! They're rioting all over the place. Can't say I blame them. What a racket you kicked up!"

"You can go closer to look if you want," von Theil said calmly. "I think the stratosphere is pretty well clear of noxious gases now for a while. But see—I didn't wreck the air plants at all. I didn't hurt anything but their feelings. Scorched the roofs, maybe, but the rain put that out quick."

In every city and town as the visors picked them up one by one, frantic crowds were storming the government houses and swarming about fleeing armored cars which converged swiftly along the network of broad roads. "Those cars are making for Fleet Base! Look, there it is—looks like most of the

Uranian fleet is cradled there!" cried West.

Car after car outdistanced its pursuing mob and reached the giant drome. Brumby rapidly spun the tuning dials of his speaker. "Calling Colonel Tilton's flagship!" he yelled. "Stand by for mass sortie of Uranian ships! They're coming out in force!"

However, as ship after ship took off, it became apparent that flight, not fight, was all that occupied the minds of the Uranian pilots. They wished only to get away from their home planet and their aroused and frantic population. They shot out into space at crazy angles and reckless speed, dodging the Terran ships without even offering to fire on them. One or two were shot down, a few were captured; but scores escaped into the blackness of space, never to return to their homeland, but to become a haunting, desperate fleet of pirates on the fringes of known space.

The visor plate began to hum and glow. "They're calling us from the ground," Brumby shouted.

The plate soon filled with the images of squat, heavily built Uranian men and women, their pallid faces and drawn features betraying their excitement. An old man spoke.

"Earthmen!" he called in a hoarse voice, "as chairman of the Revolutionary Committee of Uranus, I am suing for peace! We have driven out our overlords, taking advantage of the terrible storm which we have reason to believe you caused. The overlords have fled with all the government treasure, so we hope you will be lenient in your terms. We, who are now in charge, have never favored this war and have striven vainly to end it. We are at your mercy."

"Peace is what we want ourselves," Brumby replied. "I accept your surrender, but have no authority to grant terms other than a temporary armistice. The blockade will continue until those terms are settled, but you need fear no

hostile moves meanwhile. If you have a small skyboat handy, send your peace commissioners to this vessel and I will take them to Earth to treat with the Planetary Council. Do you need any help or supplies?"

The Uranian chairman breathed a long sigh of relief. "Many thanks. We are in no immediate need. We will be aboard your ship in half an hour," and the screen faded.

"Now!" exploded John West, pushing the little doctor into a seat and menacing him with a brown forefinger. "I've waited long enough to know what you did! Spill it, Doc, if you don't want me to bust!"

"My, no! Don't bust. You see, when I made my exploder three years ago, I fixed it so it couldn't be a war weapon, as you know. But this time I used it not only for peace, but for health too. I cleaned out the poison Ritzbaden's work left in the stratosphere. Uranus will be lots nicer to live on for a while," and von Thiel pulled forward.

"But what the heck did you do?"

"I just set fire to their hydrogens."

It must have been pretty hot down there for a while. Those two were just an application of the old law of resultant of forces. Each one is quite harmless by itself, but when they meet at the proper angle, they bump, and you got my exploder. Pow! So, I felt

along Mr. Mowbray's beam, with mine, exploding little bits of stray gas, until the rays joined just where the hydrogen layer merged with the atmospheric gases. And then—boom!—it popped and burned. One big thunderstorm over a whole planet's surface! So, that made a lot of water all at once, and it rained down and put out the fire. And so, the Uranians overlords got in ditch and scrambled, and now we got peace!"

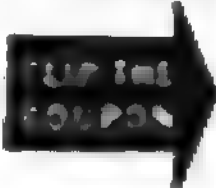
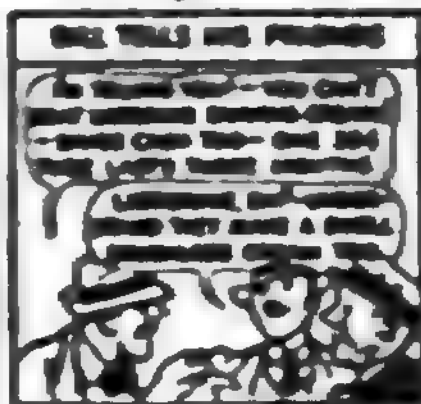
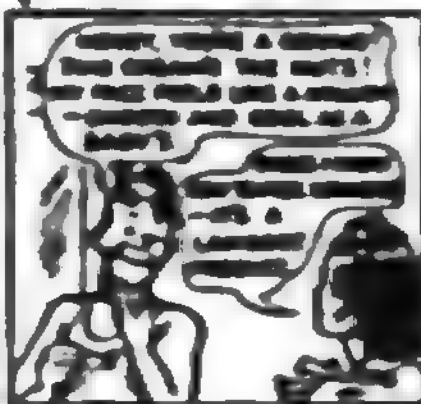
A small lifeboat slid alongside and four spacesuited figures stepped through the air lock. Through the transparent helmets showed the faces of three white-haired men and one burly, rather handsome youth. Quickly they introduced themselves, showing credentials authorizing them as members of the peace commission. "And I made bold to bring my son Madoc," the leader added, nodding toward the huge boy. "As a member of the revolutionary party he has been debarred from our university. He hopes you will allow him to come to Earth to study."

"What you want to study?" asked von Thiel, his eyes twinkling.

"Physics, sir," and the boy saluted smartly.

The little doctor ran an approving eye up and down the young man's sturdy body. "You come with me and I will see that you learn some physics," he chuckled. "And, mister, how my university can use a fullback like you!"

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CITY OF THE CORPORATE MIND



by RAY SCHACHNER

CITY OF THE CORPORATE MIND

Past, Present and Future—in the persons of
three men of three ages—invade a city of
the far future—a strange, twisted society—

By Nat Schachner

Illustrated by W. A. Kall

THE Red Sea made an oily patch beneath. To the left stretched the vast, unbroken jungles of Africa. On the right the sun dazzled back from an interminable expanse of barren sand and rock. Everywhere there was silence—deep, brooding, moveless.

Only the soft roaring of rocket jets punctuated the hush as the stolen ship of Harg fled north and west, cleaving the upper air like a silver bird in flight.

"Still nothing—and always nothing!" growled Sam Ward, man of the twentieth century, his gray eyes intent on the unpeopled solitudes below. "Perhaps my hunch is wrong. Perhaps Dadelon was the last outpost of the isolated cities of Earth. And even that curious flying city is gone," he added wryly.

Beltan, Olgarch of Hispan, turned his tawny, aristocratic head with a faint smile. "You forget that my native city is still intact," he reminded. "Its neutron walls will defy both the rocket horde of Harg and the mightier thought-waves of Ras."

"A lot of good that will do us—or Earth!" Sam exclaimed. "Your fellow Olgarchs consider you a traitor since you helped us escape. They'd put us all to death if they ever laid hands on us."

"I am not afraid of death," snapped Kleon, Greek of Alexander's time. His golden hair was surmounted by a battered helmet, his clean-chiseled features

and bright-blue eyes gave him the appearance of a Phidgian god. The shield that ever hung from his shoulder clashed brazenly against his tarnished armor; the javelin that never left his hand described an angry arc. "It isn't death I mind," he repeated, "as long as my feet are firmly planted on the solid ground and my sword can strike at enemies that are palpable and within reach. But these newfangled weapons of the future, that kill at a distance and in cowardly fashion, and this boat that cleaves the air like Icarus with his waxen wings, are beyond me."

Sam Ward thrust a quick, anxious glance to the rear. "We seem to have escaped the hordes of Harg temporarily. There's nothing in sight."

Beltan nibbled with manifest distaste at the smoked hindquarters of a hare. They had captured it during a hurried descent off the Gulf of Aden where they had synthesized fresh rocket fuel and laid in fresh stores of water and game.

"Sooner or later," he observed calmly, "the horde will catch up to us. The thought-tentacles of Ras are far-reaching. And when we go, the last chance of warning whatever cities may still exist goes with us. Vardu of Harg and Ras of Asto will rule triumphant."

"Which means Ras—that spindle-legged, swollen-headed apology for a man," declared Kleon with magnificent

contempt. "Vandu's just his tool."

Sam's eyes burned ahead. They were right—both of these comrades with whom he had come to be so strangely associated. Ras, who had unscrupulously joined forces with the totalitarian horde of Harg against his own race, who had sent Dadelon hurtling to destruction, would never submit to equality with his fellow conquerors. In his scheming brain, mighty with concentrated thought, there must be plans—

The rocketship sped over the sluggish Nile and, where once the Pyramids were thought to stand eternal, nothing remained but the lone and level sands. The Suet Canal was gone, choked by lush, fantastic weeds. The Mediterranean glimmered blue beyond. This cradle of civilization, home of earliest empires, broad-thoroughfare for thousands of years to the traffickings of men, was now silent and desolate, rimmed with unfamiliar contours, tomb of vanished hopes and fears.

Yet Kleon's eyes kindled at the sight. "Home!" His voice was a prayer. "Home to Greece after ten thousand years of absence! Surely the great Alexander's seed has not perished with the rest; surely the glory of Pericles and Plato, of Themistocles and Aristotle have left eternal marks. Here, if anywhere, we shall find that free people of whom you dream, Sam Ward!"

But Sam shook his head in sadness. "The glory that was Greece, like the grandeur that was Rome, had died even before my day, eight thousand years ago. However, we can look."

For hours of precious, waning time they flew feverishly over the deep-indented coast, hurtled over fabled Olympus, sought signs that men still existed in that once-glorious land.

But they found nothing!

The flame of longing in Kleon's eyes died slowly to bitter tragedy. "Gone! All gone!" he whispered, and bowed his head.

Sam and Bekan moved softly to the prow of the rocketship, respecting his grief. Once again they were high over the Mediterranean.

"Were there any other civilizations that might have survived in this land you call Europe?" asked Bekan.

Sam's face clouded. "If you can call them civilizations," he said unwillingly. "In the twentieth century they had mostly turned into dictatorial states, massed nations like the horde of Harg itself. Megalomaniacs ruled them and brought them eventually to that destruction in a later century which buried all mankind and made of Earth a shambles. But farther to the west there may still be some forgotten survivor that—"

Kleon lifted his head and stared moodily over the side. It had been impossible for him to believe that his native land could have shared the general debacle that overtook the world. All through his adventures, since his awakening from the radium-induced sleep in the land of the Mayas, had run the unexpressed hope of revisiting the purple hills of Attica and the windy plains of Thrace and hearing once more the rolling surge of Homer's tongue. A sudden homesickness gripped his vitals and left him weak. To a Greek all other races are barbarians, all other lands sterile. To be sure Sam Ward and Bekan were comrades, fit even to have partaken in the godlike Alexander's wide-marching expeditions; but they were exceptions. In all Earth he would find no others. And now the hope that had buoyed him up was gone, shattered beyond redemption!

The sea blinked up at him, beckoning. Only that hadn't changed. The blue Mediterranean, over which the lordly triremes had sailed, and the hawk-nosed merchants of Sidon and Tyre had sent their wares—

THERE was no wind, and the heat of summer lay breathless on earth and sky,

yet the Mediterranean was suddenly in motion. Kleon blinked and looked again. A long shudder rippled over the surface, like the peristaltic movement of a gigantic worm. Then the water bubbled up in a vast arc and overwhelmed the rimming shores. The bubble collapsed and swelled again, rhythmically, in regular pulsation; while underneath dim things moved and stirred.

Kleon clung to the edge of the rushing rocket craft for support. "By Poseidon!" he cried hoarsely. "A monstrous serpent writhes and stirs within the sea. Look yonder!"

His comrades rushed to the side and peered down. The pulsations were increasing in violence. The whole Mediterranean, from the coast of Syria to the Strait of Gibraltar, foamed with expansion. The low coast of Africa lurched under countless tons of briny water.

"Good Heaven!" exclaimed Sam. "The sea's alive! There's something underneath."

Bekan remained calm. His proud poise never deserted him. Excitement, or sign of emotion, was unbefitting an Olgarch of Hispan. His long, slim fingers moved effortlessly over the controls. The silver ship swung in spiraling descent until it barely skimmed the surface of the pulsing sea.

"There is life below," he admitted, keen eyes searching the roiling depths. "But not of the type friend Kleon supposes. A city is incased within the sea—a city with flexible walls of water."

"But that's impossible," gasped Sam. "How can water create a dividing line?"

"Look out!" shouted the Greek and thrust up his shield in vain defense.

Bekan toggled hard at the controls, the sweat beading on his pale, patrician countenance. Sam dropped flat to the rounded bottom of the ship.

The sea rushed up to meet them. One hundred feet it heaved into the air, while

the skimming vessel wrenched in every strut and rocket blasts jettied futilely in swift, upward thrust.

The bubble of waters caught them in irresistible tide, swung over and above them. The roar of flames quenched in the smothering medium; Sam gulped salt water and instinctively braced himself against the furious surge of the sea.

Then, magically, everything cleared. Choking and sputtering, Sam staggered to his feet, coughing up a lungful of spray, clearing his blinded eyes of salty immersion. The gigantic wave had receded, leaving in its wake only a thin film of water at the bottom of the rocket-ship.

"Bekon! Kleon!" he gasped. "Where are you?"

The Greek rose lithely to his feet, thrusting aside the shield under which he had crouched against the invading tide. "Here, Sam Ward." He spat out a mouthful of water. "By Poseidon, but that was a narrow escape! I thought surely the lurking monsters of the deep had caught us that time. It were best that we leave this place—"

The Olgarch of Hispan shook the spume from his tawny head. His face was grim and taut. His fingers leaped over the banded instruments and fell away with a despairing gesture.

"We can't get away, friend Kleon! The rocket tubes no longer function. We are underneath the sea!"

SAM LOOKED blankly around. For the first time the muted silence of the rockets struck him, and the sudden cessation of accustomed motion. But that was not all! The fierce blaze of a cloudless sun was gone, replaced by a filtered, soothing illumination. The sky itself had vanished; in its place overhead was a green overarching of smoothly racing waters, rounded in a catenary dome and stretching to misty horizons as far as the eye could see.

Involuntarily he ducked, while Kleon

invoked the entire pantheon of gods for succor. But the liquid roof—countless millions of tons of rushing ocean—kept its form and contour and failed to fall in catapulting catastrophe.

"We were plucked under deliberately," Sam said hoarsely. "We were seen and caught."

"By whom?" demanded Kleon.

"That," observed Belkan, "we will find out fast enough. In the meantime, we are moving."

A thin, transparent film formed around the captive ship. Swiftly, silently, like a helpless pupa in a cocoon, they slipped along. The three men of dissimilar times gripped their respective weapons and stared.

The filmy bubble in which they were inclosed picked up speed. It hurtled along a strangely curving track. Outside, Sam could barely see the circumscribing walls of the tube—transparent, shimmering, glittering with little flecks of flame.

"We're in a tunnel of sorts," he whispered, crouching. The automatic that had served him well, though millennia old, snouted outward.

"Or rather, an artery," corrected Belkan. He held his electro-blaster in negligent grip.

"Good Lord!" exclaimed Sam. "And we're the nucleus of a cell. The wall that surrounds us is the cell wall."

"Exactly." The Olgarch frowned. "I'm afraid—"

"You speak in riddles," Kleon burst out. "but here come human beings whose appearance I much dislike."

A moment before the shimmering tunnel along which they sped had been empty except for themselves. Now, suddenly, it swarmed with hurtling men. But they were men such as Sam Ward had never seen before.

Of two types they were. One was a pale, sickly white, elongated and thin. The other was a brownish-red, chunky and rounded. Both had legs that held

firmly together with tough connective tissue and their arms weaved in front of them as though they were swimming. Their lidless, lashless eyes were wide and unblinking; pale hair and reddish treamed backward with the wind of their flight. They came swarming down upon the rocketship like divers cleaving an invisible fluid. There was no expression upon their faces, but little knobs bulging on their foreheads quivered with strange vibrations.

They burst through the shimmering bubble that surrounded the plane as though it were merest tissue. On they came, directive, purposive, straight for the three men, arms weaving and clutching.

"Don't resist!" Belkan said quickly, but too late.

A pallid, elongated figure whipped writhing fingers around the startled Greek.

"Ha!" he gasped angrily. A mild shock quivered through his straining muscles, brought red fury to his dauntless spirit. He was not used to tame submission. His short, keen-bladed javelin came up with lightning speed and plunged deep into the dead-white body of the offender.

The man fell away, sporting a sickly-colored blood.

"Ha!" cried the Greek again, brandishing his weapon. "Let that teach you not to lay hands on a free-born Athenian."

"We're in for it now," groaned Belkan. "Kleon will never learn. All right, Sam Ward, we'll have to fight and may Heaven help us!"

The plunging figures had hesitated momentarily at the wounding of their fellow. The little knobs on their foreheads increased their vibration. A blue glow surrounded them in pulsing globules. Then they came on again, faces expressionless, eyes unwinking.

Kleon ejaculated an ancient oath as he

lifted his javelin again. The man into whom he had plunged the weapon had galvanized into life again; was darting forward with his fellows as though he had not been disemboweled. The gaping wound in his side had closed and the ichor that issued was reduced to a tiny trickle.

Sam pumped twentieth-century bullets into the oncoming horde. Kleon's javelin thrust again and again. Bel-tan's electro-blaster flamed its bolts of destruction.

But still they came, hundreds on hundreds. Neither bullets nor javelin blows could stop their assault. The wounded fell back with red or white spurts of blood, and came on again, suddenly healed. Only the flaming disintegration of the electro-blaster ripped through their serried ranks and spattered them into nothingness.

Sam emptied his clip and cursed. Kleon staggered back and reached for the heavy sword that swung from his thigh. As far as the eye could see, newcomers were swarming to the attack, diving headlong, arms outstretched.

Wherever they touched, fierce electric shocks quivered through the defenders. Sam tried to club his useless gun, but his quivering muscles refused to obey his will. Long fingers darted over his body. The contact jolted him with strange fires. It was torture to move. As in a haze he saw Kleon's brawny arm sink slowly to his side and Bel-tan's face contract with pain.

Stiff, unable to move, yet jerking at the touch of their captors' fingers, they were hurried along. The rocketship and its immobile contents increased their pace. Platoons of white and reddish men, as though obedient to some distant command, wheeled in unison and vanished. Only a handful—fingertips resting on their victims—accompanied them as they careened along the shimmer of inclosing walls.

THROUGH the transparency Sam watched with moveless eyes the shifting panorama of a strange city and stranger land. Scores of similar hollow tubes, varying in color from glassy visibility to red and purple hues, converged in huge arcs from the outermost reaches of the circumscribing watery arch toward the destination to which they were traveling. Crisscrossing channels tied them into a connected system. Red and white beings, similar to the ones who had seized upon them, sped along the tubes and arteries in purposeful, orderly array, bent upon unknown errands.

At stages the channels threw off supplementary tubes that ended in monstrous machines of gleaming metal. Some were like pumps, intricate in pattern, others pulsed with interior glow, some whirled in concentric rings like huge gyroscopes, others seemed manufacturing from which endless streams of rounded pellets, held in a matrix of sticky fluid, sprayed into blue, connecting arteries and bathed their denizens in its depths.

Each machine had a cupola at its top, a bubble of sheer transparency. Within the shell sat a man, more humanlike than the others, his knobbed forehead aglow with electric aura, and tending the controls. Here and there, as they rushed along, Sam got glimpses of other types of men—some powerful giants and ruddy of complexion, others attenuated and ethereal of hue, who slipped through the atmosphere with the ease and swiftness of a rocketplane.

Then, suddenly, they were whirled out of their transparent channel into a smaller tube of yellow hue. Three brawny men waited for them there. Their muscles bulged and their bodies were squat and powerful. They caught the speeding ship and brought it to a halt as easily as though it were a toy. The escort of pale and reddish men touched them with whispering hands, then turned and darted back the way

they had come. The three jerked forward like unleashed bolts of lightning.

Sam felt the blood once more surge through his body. At the release of those electric fingers the shock oozed from his system. He flung around on his comrades. They too, were stirring back to normality again. The three men who piloted the ship with muscled grips did not seem to be aware of their existence.

Kleon snarled fiercely and hefted his javelin with still-tingling fingers.

"What do you make of these people?" Sam asked the Olgarch.

Bektan's noble forehead creased into little frowns. He studied the powerful forms of the men who had the ship in tow. "Curious!" he murmured. "A total subdivision of labor and of function. Each group, different from the others, has its specified task. Each member of the group performs his appointed duty regardless of death, or wounds, or obstructions. Those who first picked us up were scavengers—so to speak—detailed to keep the arteries of communication clean and free of all alien matter."

"Are we then scum, or garbage?" demanded Kleon heatedly.

Sam grinned a bit roekfully. "In this city we are. As aliens we have no place in their economy."

"Their job performed," pursued the Olgarch, "they turned us over to these different creatures. They are the muscular type, swift of motion, powerful—the carriers."

"And those fellows in the machines?" Sam pointed to the interior of the city.

"The tenders, the subdirectors of the city's life." Bektan shook his head, puzzled. "Hispan had its division of labor, but nothing like this. Each man, regardless of his position, nevertheless was an individual, with a will and a mind of his own. Even the hordes of Harg have the power, if each so de-

sires, to rebel or refuse to do his allotted task. But here—"

"I noticed that too," Sam almost whispered. "They seem to be practically automatic, without power to act for themselves. Orders are given, and their response is mechanical, immediate."

"Do you mean then they are not men?" Kleon demanded.

"They're men, all right, but men who have evolved into subordinate parts of a total economy. Hispan and Harg are but steps along the way. This is the ultimate totalitarian state, the goal toward which Earth's evolution was obviously working. A single corporate existence, in which human beings are but mechanical cogs, specialized in function and obedient to the common purpose."

The Greek shivered a bit. "I do not like your evolution. Man has lost his dignity, his sole reason for existence. Why, I prefer even the Individualists of Aste, or the variants of Dadelon to these—slaves."

"They're not slaves," Sam pointed out, "but component parts of an organized community. No one is greater than his comrade, but all are equally and efficiently subordinate to the common good. Take your own body, for example. There is a similar division of labor. You have your heart and lungs, your arteries and blood corpuscles, each —" He started violently. "Good Lord!" he barked.

"I thought you'd finally get the idea, friend Sam," nodded Bektan. "It's been in my mind ever since we were first attacked. Your simile is not only apt; it's exact. This city is a monstrous body. These tubes are its arteries; those white and reddish creatures who first attacked us are its corpuscles; these correspond to the muscular elements. Out beyond, you note the attenuated, swift-darting creatures. They are doubtless the messengers—the nerves of the city. The machines are the me-

chanical organs; heart, lungs, if you wish, that keep the body functioning smoothly. In each sits a director—specialist in the operation at hand—relating his machine to the others—a minor executive."

Kleon snorted. "Bah! Even Plato, who once compared the state to a human body, as you do, knew that it was mere analogy, not the truth."

"He spoke better than he knew," Sam said softly. "But if you are right, Beltan, where is the brain?"

"We're being taken to it—the master person or mechanism that co-ordinates all the others. If you've noticed the strange protuberances on their foreheads, you've also noticed their vibratory glow. These creatures receive their impulses to act and automatically report back what they see, hear and the state of their reaction, through those receiving and broadcasting knobs."

Kleon gripped his sword tightly. "Then we'd better try to fight our way clear now," he exclaimed. "We've killed their men; we can expect no mercy."

"We could never fight clear," observed the Olgarch. "We've got to take our chances."

CROUCHING, they awaited the end of their strange journey. It came with a curious suddenness. They switched abruptly from the main artery into a short channel that ended in a domed globe where sat a man with bulging forehead and concentrated men. He did not even look at them. Instead, his receptor knobs quivered at their approach and he threw a switch. The action seemed wholly automatic. An arc blazed electrically. One filament touched the forehead of the three brawny men. Instantly they relaxed their grip on the captive ship, wheeled around in unison and catapulted back the way they had come.

"Well!" Sam pursed his lips. "We've

evidently reached the end of the road. This bird must be the brain—"

But he was wrong. For the other flickering surge of the arc reached along a connecting channel. A pallid, elongated, wavering creature darted into view. His speed was of the order of a rocketship.

"Ai-ee!" Kleon spluttered. The attenuated man's incredibly mobile fingers had barely touched the prow of the boat, yet it jerked forward along the new tube at a furious rate.

"You might call him a messenger nerve cell," nodded Beltan with a kind of scientific satisfaction. "We just were switched at an automatic reflex from the motor to the sensory units."

"I'm getting dizzy at all this switching," said Sam wryly. "What I want to know is where we're being taken."

"If the analogy is correct—to the brain, the seat of co-ordination."

Outside the transparent walls of their conducting channel they saw hundreds of others, all converging with them as they hurtled along toward a central source. To Sam it looked for all the world like the tentacles of an octopus, with their as yet unknown destination as the maw itself.

"Our speed is slackening," Kleon said quickly. His knuckles whitened over the hilt of his sword. Come what may, he did not intend to go down unresisting.

Sam felt a curious lump in his throat. The attenuated man pushed them smoothly into a bubble with flexible walls which expanded even as they penetrated to conform in size and shape to its captive load. Then he turned and slid like greased lightning back the way he had come.

"We've reached the brain—the central control," said Beltan without emotion.

As with everything else in this strange undersea city the circumscribing walls of their flexible cell were transparent.

Through them they looked into a huge globular chamber. Its shimmering wall spangled with thousands of flashing lights. Each light connected with a tube that snaked outward into the city proper. They all flashed on and off in definite sequences, multicolored, bewildering. Back in the twentieth century Sam had once visited a telephone exchange with an automatic dialing system. This was something like that.

The interior of the chamber held no furnishings or apparatus of any kind. But a score of figures spun slowly around and around in three concentric living wheels. The outer wheel moved the swiftest, the interior one the slowest, so that always the figures kept invariable distance and vectoral direction with respect to each other.

They were men of an obviously intellectual cast. Limbs and body were shriveled and dangling, as though they were long-stemmed appendages. Huge heads dwarfed all else; heads bulging with intellectual calm and utterly hairless. Instead of two knobs, however, lifting from their skulls, there were dozens, constantly quivering with little darts of cold flame that synchronized with similar flashes on the heads of the others and with the pulsing lights that spangled the chamber.

"But where is the ruler who controls the city?" ejaculated Kleon, disappointed.

"I had expected a brain," said Sam, equally disappointed. Somehow he had expected, by analogy, a huge brain like that of a human being, disembodied, floating in some nutrient liquid, that controlled the city. These harmless-looking individuals, however, were more like the denizens of Asto, Individualists, unable to co-operate effectively in any common enterprise.

The Olgarch surveyed the gyrating wheels of men with keen attention. To Kleon he said: "There is no single ruler. Together they rule." To Sam he re-

plied. "The totality of them constitutes the brain. The analogy holds perfectly. Think of your own brain. It is not a single, unitary mechanism. Rather, it is a republic of individual cells. There are millions of them. No single one controls them all. Instead, all are equal in power and influence. The ultimate decision represents their common counsel, the end result of their mutual interactions."

Hundreds of nodules pulsed and glowed. Filaments of blue flame darted outward from the revolving heads, coalesced into a sheeted glow.

"Beltan, Olgarch of the distant city of Hispan, has correctly analyzed the fundamental governance of the city of Lyv."

SAM started; Kleon's head jerked around in amazement. The wheeling figures had not slackened their pace; their pursed-up little mouths had not opened; no sounds had echoed within the chamber. Yet each of the three comrades had heard the words distinctly within himself. To Sam it sounded like perfect English of twentieth-century New York. To Kleon the syllables were Attic Greek of the time of Demosthenes. To Beltan they held the clipped, slurred speech of Hispan.

"They know my native tongue!" gasped Kleon.

Beltan smiled. "They did not speak. Their common thought invaded your mind, set your own processes in motion. You yourself translated it into words."

"Telepathy, of course," said Sam. "But how did they know your name, and where you came from?"

"Your little minds are naked to my examination," came the half-contemptuous interior response. "Yet in their way they unfold interesting things. I had not known before of the existence of any other city on Earth but Lyv. When my ancestor fashioned this present abode under the protective waters



The soldiers of Harg stormed across the skies,
raining irresistible death on the City—

thousands of years ago, he did it to escape the plagues and fierce wars that swept the surface. Generations later, expeditions that ventured out reported Earth to be desolate and lifeless. Man had killed himself off with efficiency and dispatch. Therefore we remained in our new home, evolving along predetermined lines. I am the ultimate result—the city of Lyv."

"They—or rather, he—it's pretty confusing—talks as though he were the city, and the city was he," Sam ejaculated.

"Why not?" countered Belkan. "Lyv is actually a single organism, just as you are; though made up of a multitude of component parts—just as you are."

"In sooth," muttered Kleon, "Aristotle wrote of the body politic; so did Plato. But I never expected their winged words to take form and meaning like this."

Sam decided it was time to get down to brass tacks. "As long as you can read our minds," he told the three revolving wheels of men, "you must know three things. First, our stories and backgrounds."

The circles quivered in uniform agreement. It was more than confusing; it was a bewildering strain. Sam did not know just where to focus his eyes. One man was just like another; the synchronized revolutions shifted them like a shuffling pack of cards to his gaze. With an effort of will he solved the problem. He concentrated his stare on a single one of the small interior circle, and followed him steadily on his slower, turning arc.

"Second," he pursued, "that we have slain members of your city. That, however," he added in self-defense, "was because they appeared to be on the verge of killing us."

"The members you slew were parts of myself," Lyv replied logically, though it sounded startling enough.

Kleon grunted, half lifted his sword.

Belkan's wonted calm was broken; his hand moved toward his blaster. Yet even as it moved, he knew that he could never draw it; that before he did, strange and powerful weapons of Lyv would have come into play.

"You are quite right in your surmise," the inner voice mocked him. "Your electro-blaster was effective enough against my channel segments, because I wished to explore thoroughly its potentialities. Had I wished, even then it would have been utterly futile."

"You mean you permitted yourself, so to speak, to be disintegrated in part?" demanded Sam in amazement.

"Why not?" came the unexpected reply. "What happens in your own body when an alien disease organism invades your blood stream?"

"Why . . . why," stammered Sam, "the phagocytes or white blood corpuscles rush to the attack in an attempt to surround and kill them."

"And in the process many of your phagocytes die also, do they not?"

"Why, sure, naturally. But, good Lord!" exploded Sam. "They're only cells; they're not complete human beings, like . . . like— There are plenty more being manufactured all the time."

"And so do I manufacture new cell beings all the time. Their place as individuals is no more important in my economy than that of a handful of phagocytes in yours."

"Well, of course, if you put it that way," Sam muttered helplessly. It sounded logical; but damn it, those creatures Belkan's blaster had disintegrated had been men—human beings—not mere unconscious, simple cells!

It was Kleon, however, who struck at once to the heart of the problem. "Then you do not propose to punish us for slaying your—whatever-you-call-them?"

"I never punish," he heard the wheel's response in purest Greek. "The word punishment has no place in an

ordered organism. However, if I cannot utilize your alien frames and minds profitably within myself, or if you represent a focus of irritation or danger, then you must be eliminated."

"As though we were pathogenic bacteria," nodded Belkan. He seemed to be discussing a mere scientific point instead of his probable destruction.

"Exactly."

"But wait a minute," Sam said desperately. "Before you dispose of us summarily there is the third point. The horde of Harg, headed by Vardu and its co-leader, Ras, is on the loose. They have sworn to conquer all the Earth. Perhaps we can help—"

"I require no aid, especially from men of limited capacities such as yourselves," cut in Lyv. "I am safe from detection, and even should I be discovered, their boasted weapons hold no terror for me. Even the mighty thought of Ras must bow before my concentrated unity. Now be quiet for a moment."

Lyv was thinking. The impact of his multifarious, yet single mind, on the three comrades was like a physical blow. Kleon muttered resentfully. Sam swore under his breath. Only the proud Olgarch waited with calm fatalism.

The innumerable disks of light on the rounded chamber walls glowed and ebbed; the atmosphere was electric with crisscrossing vibrations. Along far-distant channels motor and sensory beings galvanized into activity. Reflex arcs spluttered in the globe-machines.

"Now, by Heracles!" growled the Greek irascibly. "What is the meaning of all this?"

"Lyv is seeking a place for us in his economy," Belkan said quietly. "If we fit in, we live; if we don't—" He shrugged his shoulders; but the meaning was plain.

Sam knew his clip was empty; knew that even if it were full, he'd never live to raise the gun. Kleon knew the same

about his javelin; knew as well that his thoughts were open to those queer little revolving men. Nevertheless, if the decision should prove adverse—

The inner voice came to them suddenly. "I have found places for the three of you. It is frankly an experiment on my part. If you prove properly efficient, I save the labor and expenditure of materials in replacing three constituents who have aged and must be eliminated. If you do not, then you will follow in their paths."

"I am no slave to labor for you on such terms," commenced Kleon indignantly.

"Hush!" warned Belkan. "We have no choice. Besides, it will be an interesting experiment for us as well."

"Where are we to be placed?" Sam demanded.

"Belkan of Hispan, as the farthest advanced, will direct the central machine that activates the motor-ganglion system. It's a position of considerable responsibility. Much of the decisions will be your own, subject only to emergency supervision by myself. The movements of the entire city will be under your control."

Belkan said proudly: "I am honored. You need not fear that I cannot handle it."

"As for you, Sam Ward of New York, since you are not quite as intellectually and scientifically capable, you will be placed at one of the peripheral centers, on the surface of the containing skin of water. Under your control will be the tactile members, the information feeders from the outside world of water and earth. Such a one discovered your presence in the outer air."

"Thanks!" Sam said ironically. "From the way you started I thought I was being relegated to scavenger work."

"That," replied Lyv, "will be the duty of Kleon of Athens."

"What!" exploded the Greek. His

eyes flamed dangerously; his javelin lifted. "I, Kleon, heir of the noblest civilization that ever lived, a scavenger! Now by Castor and Pollux—"

"Easy does it," warned Sam.

"You will be in charge of elimination processes," continued the inner voice of Lyr imperturbably. "The corpuscular defenders of the body politic against all alien and inimical intrusion will be under your care."

"Well, now, that's different!" Kleon's handsome face wreathed into a satisfied smile. "Why didn't you say so in the first place?"

"He did," grinned Sam to himself. "Lyr is evidently a diplomat—or rather, twenty diplomats. It all depends on how a thing is said." But he was careful to keep his thoughts from his highly sensitive comrade.

THIS isn't so bad, decided Sam. He sat in his thin-bulbed globule on the outer surface of the city of Lyr. Naturally, he had been a bit sick at first when the man he displaced had been taken away for elimination by the scavenger men under Kleon's control. But the man had been old and worn out; his body was already in the process of disintegration. After all, thought Sam philosophically, we all grow old and die. This is just another method of dying, that's all.

The work itself, he soon discovered, was for the most part automatic, requiring a minimum of intervention on his part. The machine he tended was a marvel of mechanical efficiency. To it, from the smooth-racing flood of waters that inclosed Lyr, came a tremendous complexity of membranous tubes. Along these sped the transmitted reactions of the tactile members—very delicate, fragile-looking men with sensitive skins and fingers on which the faintest disturbance anywhere made electrical contact. Their reactions led into an intricate bank of vacuum tubes

and sensitized electric cells. There they were sorted and graded according to intensity of impulse, directional approach and quality of impression.

Differential analyzers took up the task, broke down the reactions into component elemental parts, then, synthesizers built up potentials according to kind. The machine clicked and whirred, the tubes glowed and flashed, gears meshed smoothly, and new impulses raced out along the network of channels, impinging upon the vibratory knobs of the tactile men and shunted them into appropriate responses to the impressions received. The whole process was completed in less than a second, much as it is done in the human body itself.

Sam's job was simply that of a watchman. Only occasionally, when the machine faltered, or a part went wrong, or an emergency arose involving novel elements to which it was not geared, did he intervene. This had happened about a dozen times since he had been installed in the globule, a week of Earth-days ago. The only way he could determine time in this internal underwater daylight was by his original comparison of the steady beat of the machine to his own pulse. His watch had been irrevocably damaged by the radium emanations during those thousands of years of suspended animation within the sealed chamber of Quetzal.

So far the revolving brain of Lyr had not found it necessary to intervene. He was quite proud of that, preening himself inordinately on his skill. "That will show him," he thought grimly, "that a man of the twentieth century has just as good a brain, when it comes down to cases, as one of the ninety-seventh century, or any combination of men. Show me once how it works, and the rest comes natural."

Vainglory, without doubt, and due soon to a most rude awakening. But in the meantime Sam studied the strange corporate city into which he had come.

The increasing sea, he was discovered, was held in place by a powerful repeller in the very center of the city. It was encircled by a congeries of smaller machines that fed ceaselessly a type of fuel into its man, where it was transmuted into power. Atomic energy, he decided, and turned his probing mind elsewhere.

Locomotion was simple. The tubes were charged with lines of electromagnetic force. Inside the skin-tight clothes of the creatures of Lyr were thin metallic plates. By appropriate shielding and energizing, the wearer was catapulted along at any desired speed. Sam and his friends had been given the plates for their use.

Lyr was efficient, without doubt. For more than two thousand years he had been approximately in his present corporate state and everything went on smoothly and without a hitch. New members were regenerated as old ones required elimination; even among the components of the central brain. Yet always the city as a whole kept its identity, gaining in wisdom with the passage of the years, yet immortally the same individual in thought, in imagination and in memory.

For centuries he had deemed himself unique on an otherwise dead world, confined within the surrounding waters of the Mediterranean. He was too vast a total entity to push his way out through the Strait of Gibraltar, even if he wished, and thus gain the huge, almost limitless expanse of the Atlantic and the connecting oceans. But he had never wished it. What did it matter to Lyr where he was? All his horizon would be the same featureless water in any event, and thought could be pondered just as well in one place as in another.

The coming of the strangers, however, had changed the situation somewhat. They brought with them the knowledge of alien cities and alien times,

of a horde on the loose whose sole burning desire was conquest.

Yet even this did not disturb Lyr's totalitarian equanimity. He was confident in his protective, overarching floods and in the compact, unified strength that was inherent in himself. He personally had no such desire for alien domination.

SAM TENDED his machine and was fairly well content. Naturally, in time he would tire of his duties and the enforced limitation to his lengthy wanderings. And there was always before his vision that phantom ideal he had set up for himself—the existence somewhere, somehow, of a community, a civilization that conformed to his twentieth-century notions of democracy and noble freedom for all. So far he had not found it. Hispan, Harg, Asto, Dadelon, and now Lyr, were each in his own way utterly hostile and alien to that ideal.

When he felt restless like that, Sam would get in touch with his comrades. Belhan, accustomed as he was to the strict order and caste system of Hispan, found the combined singleness of Lyr quite satisfactory. He was in a position of authority; the greatest, in fact, under the brain. The city's activities, complicated in detail, yet unified in purpose, passed through his motor machines. Nothing happened anywhere that required movement, energy, without its cognizance. It was true that most of his circuits were closed and self-acting, receiving sensory reports and automatically relaying the requisite motor responses, but there was considerable choice in many fields on which he gave decision. He, too, was under the ultimate control of the brain men, yet he in turn by his decisions and machine responses exercised a measure of control over them. Just as the deliberate clenching of a fist in a normal man will set loose certain reactions which must necessarily affect his brain and

make him unwittingly angry.

But Kleon was disgusted. He soon discovered that his high-sounding title meant nothing. The switch at which he had been placed was wholly automatic. It was, in fact, of the order of an instinctive reflex. Perhaps once in a hundred thousand operations would it require direction. The Greek sat glumly in his cubicle, fingering his fast-rusting sword, staring with moody eyes at the shield that long ago had been the recipient of a thousand hacks and blows. The plume on his helmet drooped bedraggled, yet he never doffed the bronze casque. It was his sole present claim to self-respect.

Ill-smelling products of disintegration were shunted almost to his very door by the scavenger men; members who had outlived their usefulness staggered by him to elimination. His proud nostrils contracted with fierce tension; day by day his choler rose. Sam and Bel-tan tried to cheer him up; couldn't. Sooner or later, they knew uneasily, Kleon must explode, and the consequences would be incalculable.

Now that they were integral cogs in Lyv, they no longer saw the concentric circles of men who made up the cells of the brain. Yet always they were under invisible supervision, submerged in a close knit system.

"Curious," remarked Sam one day into his tiny broadcasting unit. "We must have given Ras the slip completely. Haven't seen a thing of the horde of Harg since the destruction of Dadelon."

The Olgarch stared inscrutably across the intervening transparencies. "We're not rid of them," he shook his head. "Sooner or later the thought-tentacles of Ras will ferret out Lyv; and then—"

Kleon's eyes flashed for the first time in days. "I hope he does," he said violently. "I am sick to death of this soul inaction; of this work that is fit for slaves and women. I'd rather blaze

into glorious extinction with my sword in my hand and the Macedonian cry in my throat than rust away in here, condemned never to see the blue sky again or the flush of dawn in the East or hear the strong wind singing in my ears."

The Greek's impassioned words stirred something in Sam. He had not missed the freedom of earth and sea and sky until now. Restlessness seized him. He stared up at the smooth-racing wall of waters with a sudden distaste; they reminded him of prison bars.

The days slipped by. Sam watched his machine, the circumferential waters, the ceaselessly busy tactile men. His gorge rose. He became as moody as Kleon. Vainly he sought for schemes of escape, knowing all the time that his thought processes were open to the revolving brain men. The rocketship of Harg lay in a separate cubicle, quiescent, just as it had been at the time of their capture. But rack his wits as he might, there was no way to pilot the ship through the intervening tons of water overhead. They were doomed to remain.

ON THE fifteenth day of their immersion in Lyv, barely had Sam taken his seat at the controls when he noted that something was wrong. For one thing, the tactile men at the periphery were in a state of unwonted agitation. They fluttered in wild gyrations through the connective channels; their knobs literally blazed with blue streamers of flame.

The machine was haywire, too. The messages that came in from the distracted tactile men were a jumble of meaningless confusion; gears meshed irregularly, parts clanked and whined, and nothing emerged. Sam jerked forward, startled. Nothing like this had ever happened before. He wrestled with the controls, sought to make the proper adjustments. But the uproar increased rather than diminished. The

delicate tactile men were literally running in circles; the channels blazed with distraction.

"Phew!" whistled Sam. "This seems to be a case for the brain. Either all Lyr has turned screwy, or there's high jinks taking place somewhere in the Mediterranean."

Then he sat down abruptly. An invisible hand had pressed him down. Invisible fingers plucked at the secret recesses of his mind, probing, exploring. The pressure increased. The sweat started out on his forehead. He uttered a hoarse cry, his weighted hand caught at his microphone.

"Belkan! Kleon!" he stammered into the instrument. "Ras has found us out! He's sucking me dry! Notify the brain men—quickly—the hordes of Harg are on their way!"

Then he collapsed on his seat.

Kleon sprang to his feet in his cubicle, eyes filled with battle lust. But Belkan made swift connection with the central brain. "The horde of Harg is here! Make ready for defense!"

All of Lyr roiled with agitation. Reflex machines worked furiously, scavenger men massed in overwhelming numbers at the peripheries, messengers raced along the channels with lightning speed. Even the circling brain men increased their pace until they seemed like a blur of motion.

A voice rushed along the tubes, permeated every sector of the body corporate. Sam, staggering weakly to his feet, the pressure lifted from him, heard it buzzing in his head.

"City of Lyr," it spoke, "know that I am Ras, and with me is the rocket horde of Harg, headed by Vardu, its leader. Know that we have conquered all of Earth, and submit. Nothing can withstand our combined prowess; nothing on earth or in the air or under ocean. Take heed from the fate of those who had tried resistance and yield to our sovereignty. Within your city are

three men, fugitives from our will. They have seen and they can tell you. I give you but a moment to make up your mind."

"Don't yield!" Sam shouted. "Fight them back, Lyr! Or you will be enslaved forever!"

The confusion in Lyr stilled. Ordered quiet took the place of wild scurryings. Overhead the rushing waters paled and seemed to have become translucent. Through them, as through a glass, Sam saw the blue sky above.

It was darkened with countless shapes. The great ship of Harg, in the prow of which stood Vardu, black hair bristling, dark face filled with fanatical triumph. Next to him stood Ras, a caricature of a man, with bulbous head supported by a weak and swaying body. Around them hovered a hundred thousand fierce robot warriors of Harg, each incased in his stellene rocket sheath and bearing in his hand the flaming rod of disintegration. A mighty armament, fresh from the destruction of Asto and of Dadelon.

A collective sound welled up through the covering waters from Lyr. Sam could not place its origin; it seemed to come from every unit of the city, from scavengers as well as neurone men, from themselves as well as from the swift-whirling brain.

"I, Lyr, do not fear you or any other group of things or beings in this or other worlds," it stated in a matter-of-fact tone. "I am a peaceful individual, intent on myself and seeking no domination over others. For thousands of years I have lived within these waters in peace and quiet. I am content to continue so. It does not matter to me what happens on the face of the earth or in the sky, as long as I am not disturbed. Therefore go about your affairs and seek your conquests elsewhere."

Vardu's face darkened with fury, but Ras merely chuckled. "Unfortunately

it is not as simple as that, my dear Lyv," he said. "We cannot afford to leave intact any independent body in the bosom of our domain; it would remain a constant temptation and focus for future revolt. Besides, you have in you, the three strangers—Sam Ward, Beltan and Kleon—who have defied us these past months and sought to stir up trouble against us wherever they have fled."

"The three you mention are part of me," replied Lyv. "They remain where they are and you remain where you are, or it will be the worse for you."

"Attaboy!" yelled Sam delightedly. Kleon's war cry rang loud and long; his sword clashed with martial sound against his shield. Beltan said nothing, but took out his blaster and inspected it carefully.

Vardu screamed with maniacal rage. "What are we waiting for, Ras? Let us blast the presumptuous fool out of the waters in which he is hiding."

The Individualist turned to him with a gesture of contempt. "You do not understand, friend Vardu," he purred. "Lyv is a different case from your former conquests. At Asto, against my former people, you would have lost had I not aided, and their stubborn individualism aided as well. At Dadelon it was the same thing. But here is a single unified body, each part obedient to the will of the whole. It will not be an easy victory."

"Bah!" snarled the Hargian. "You overrate Lyv's power and your own services as well. We shall attack, whether you want it or not."

The bulbous head of Ras turned a bluish-green. Lightnings flashed from his cold gray eyes. Then he bowed suddenly. "Very well, Vardu, let it be as you say."

The Hargian sneered in triumph. "It had better be, Ras. You are wise to submit." Then he turned to his waiting

horde. "Attack, men of Harg!" he screamed. "Kill, burn, slay for the glory of Harg and of Vardu, your leader!"

A RUSHING, whistling sound enveloped Earth. As though they were a single man the hundred thousand warriors hurtled downward to the attack. Stellene envelopes cushioned in a flame of exploding gases; earth and sea thundered with huge vibrations of sound. In each fanatical eye glared a reckless fury; in each fisted hand gleamed the tipped stellene rod.

Down, down they came, smashing through resistant air, straight for the sea of waters, blaring with speeds of hundreds of miles an hour. Involuntarily Sam threw up his hand to shield his eyes from the molten glare. No power on earth, it seemed to him then, could withstand that massed attack. In water as well as in air the stellene sheaths were impermeable to ordinary weapons or the shock of steel, while the stellene rods could blast their flames through the uni-way metal against their foes.

Helpless, his futile gun in hand, he awaited the shock of contact. In another globe Kleon danced and shouted indistinguishable things, wild with rage at his inability to get at the hated foe. But the Olgarch sat calmly in his compartment, electro-blaster motionless in his lap, curiously undisturbed.

The forward-driving squadrons hit the sea simultaneously. The Mediterranean heaved upward in a geysering roar of seething, boiling, steaming waters. A huge tidal wave lashed outward in all directions, inundated the surrounding coasts under a smothering foam of irresistible fury. Great clouds of hissing vapor rose into the weltering air. The concussion shook all Europe and Africa to their rooted foundations.

As if they were so many sharp knives plunging into soft butter, the rocket horde cleared the tumbling waters. Rocket tubes sealed tight to guard against the influx of alien elements, but the momentum of incredible acceleration hurled them down through the foaming green depths.

Down, down, down, like sharp-toothed sharks, each Hargian clearly displayed in his lucent sheath, each warrior ready to burn and smash and slay in accordance with the command of the ineffable leader!

Sam stared up in silent horror. What could Lyr, for all its compact unity, do against this massed assault?

Within, everything was silent and motionless. The clustered component creatures were at their various posts, unstirring. No visible weapons were in their hands. The hush of death pervaded all. Even Kleon had ceased his Macedonian shouts and stared with the rest.

Down, down, through a hundred fathoms, down to the smooth, racing dome of withheld waters. In another spit second the horde would pierce; and then—

There had been no command; there was no sign of new activity in the whirling brain. But suddenly the body corporate of Lyr sprang into fierce motion. The knobbed foreheads of the countless constituents quivered with

crackling lightnings. They machines blazed and sparkled and spun like mad. The great network of channels flared with a sunlike brilliance; electric currents of immense amperage and tremendous potential swept outward in a storm of cosmic power.

The wall of waters disintegrated into a seething madness of primordial elements. The down-rushing horde was caught in a fury of crashing vibrations that stopped them in their tracks and swept them backward with accelerating speed.

The stellene rods blasted and sizzled their lightning bolts. The outer channels of Lyr flamed red and hundreds of tactile men crisped into nothingness.

Titanic battle had been joined.

Never, since the first molten surface of Earth had stormed under the constant fury of downpouring waters from an overlaid sky, had the seas been in such frightful turmoil. As far as the polar oceans and stress of conflict raged. Ice caps, fixed for eons, tumbled into the boiling waters; huge sections of the coastal regions of the world groaned under the onrushing floods.

Thrust back into the air, the rocket tubes flamed again, and again the Hargian hordes flashed to the attack. Deeper now they hurtled, leaving rocket tubes flaming even as they sliced the waters. Hundreds more of channels flared into disintegration.



Sam cursed and raged. If only he could do something, reach some weapon of unimaginable power before Lyv were overwhelmed, and he and his comrades with it! At least on Asto and Dadelon there had been means of escape, but here there was none. They were condemned to die with their host, like rats in a trap.

Then he blinked.

From all sectors, along every channel, swarmed the scavenger men of Lyv. Thousands on thousands in endless, rushing array, bulleting upward the area of destruction and fantastic conflict.

There was no expression in their eyes—pallid, elongated men and chunky, ruddy ones alike. The membraned feet were close together; their flexible arms were wide outspread. Against the fanatical hordes of Harg they pitted the equal obedience of totalitarian unity.

The great magnetic currents swept them on, rooms of cohesive destruction, through the radiating tubes, into the area of blasted channels, into the welter of seething overhead waters.

"They'll all be drowned!" whispered Sam, watching with a thrill of horror.

Like swimmers springing back to the surface they plummeted, arms wide, eager. Each grappled with a stellene-clad warrior. Hundreds fell away in an explosion of flame and steam. But others took their places, grappled with self-annihilation. Their questing fingers wrapped around the steamy surfaces of the stellene-sheaths; the outrushing flow of magnetic fury coursed through their knobs and infused them with tremendous potentials. Inside the sheaths, Hargians screamed and sizzled into smoking ruin, while stellene weapons clanged harmlessly to the hollow cylinders.

Vardu, in his flagship overhead, cursed and sent new hordes downward to attack. To meet them streamed equally fresh battalions of the scavenger men. For each Hargian who died

in the depths half a dozen Lyvians disintegrated.

"How much longer can this keep up?" cried Sam, though no one was listening. "There aren't enough scavenger men for replacements at the rate they're going. While Vardu has—"

"Look, Sam! Look around you!" Bekan's voice was sharp and hurried in the receiver.

Sam whirled. Throughout the central mass of Lyv long, white cylinders were scattered. Sam had often wondered at their functions, but never until now had they been active. Now they were incandescent, rotating furiously. The white glow of their surfaces rendered them translucent, and in their interiors he noted little whirling blobs of shadowy matter that pulsed and grew into shape and form. From the ends of the cylinders, fitted snugly into small, connective tubes, catapulted endless streams of scavenger men, still glowing with the fiery energy of their creation.

Without hesitation, they flung themselves into the onswEEPing currents and raced upward to join their fellows in the battle.

Sam thrust a shaking hand over his forehead to wipe away the sweat. "So that's the way it is!" he muttered to himself. "I might have known. Component men are cheap in Lyv; just as individual cells in a human body. Plenty more can be manufactured. What a place!"

UP ABOVE, the tide of battle had turned. Vardu, frantic with rage, thrust more and more of his obedient horde into the maelstrom. For every one that died a half-dozen Lyvians went along. But the horde of Harg was limited, while Yyv poured always new supplies to the front.

The waves of Hargians thinned, but still Vardu would not yield. He seemed insane now; his eyeballs glared like

beacons, his plastered hair was disheveled.

"More! More!" he shrieked, and the robot soldiers went down to destruction.

At last there were no more. Above, the sky not long before darkened with what seemed an immitable horde, was cloudless now. Only the hovering ship of Harg with its two occupants, Vardu and Ras.

Vardu flung for the controls. All measure of sanity had quit him at the sight of the immolation of his once resistless horde. "We'll get them yet. Why do you stand there like a mummy, Ras? Where is that vaunted thought-shell you bragged about? Turn it on, while I dive the ship. Turn it on!"

But Ras stood quietly, making no move. A thin smile of cold contempt wrinkled his thin little lips. "You fool!" he said. "You've shot your bolt. In your pride you thought to overreach me, who am worth a million like you. Well, you're through now. Know that I've merely used you for a tool. Your usefulness to me is at an end; I foresee new and greater possibilities than ever before."

Vardu jerked up, startled. Sanity and alarm swept into his eyes. His hand went lightning-swift toward the stellite rod at his side. But swift as he was, Ras was swifter. A shimmer of expanding force moved outward from his skull. It touched Vardu. The Hargian dictator had no chance even to scream. An outward rush of flaming, incandescent gas was all that remained of him. Ras leaned on the rail a moment, his pale lips smiling, his cold gray eyes contemplative on the still heaving wreckage beneath.

Sam was doing a jig in the confines of his globe. Kleon clashed his shield with brazen clangor in a psalm of victory. The incredible had happened. Harg, the destroyer, the conqueror of

half the Earth, was wiped out, vanished into the mists and obloquies of time as though it had never been. Not a single one remained of that once ruthless, power-mad horde. And Lyv had done it—Lyv, that by his own avowal, wished only peace and self-sufficiency. Earth was saved! Sooner or later they would be permitted to go, to seek more of the hidden remnants of an ancient world that had burst asunder through the greediness and blood lust of men like Vardu. Perhaps among them there would be one—

But Belkan, Olgarch of Hispan, did not join their rejoicing. His aristocratic brow was furrowed with frowning thought. His lips were tight against all utterance.

Sam stopped his impromptu jigging. "What's the matter with you, Belkan?" he demanded.

"Ay, man of Hispan," called Kleon, "why do you not join the psalm of victory? Such a battle have I never seen, not even when mighty Alexander thrust through the Persian host or the elephant army of Porus."

The Olgarch stared with wry countenance from one to the other of his fellows. "You forget," he said gently. "Ras of Asto."

"Holy smokes!" grunted Sam. His eyes jerked up and outward.

The overarching veil of waters was still torn to shreds. Debris and sooty wreckage floated tumultuously in the outraged air. The great silver ship of Vardu floated with it. But its prow was empty.

Ras, mighty with evolved thought, had vanished!

"But where the devil—" Sam spluttered in bewilderment.

Th Olgarch's face was a proud, cold mask. His words dropped like distilled poison into their astounded ears. "Ras," he said, "has merged himself in Lyv!"



From the spinning wheel of dwarfish men that were the mind of the Corporate City, he snatched a unit—and slipped into its place!

Ras had laid his plans carefully. He had joined Vardu and the rocket horde of Harg because he required their aid to overcome his fellow Individualists on the island of Asta. He utilized them in

the destruction of Dadelon. But Vardu had swelled with arrogant pride and deemed himself the stronger in the alliance. Therefore it was time to get rid of him.

Perhaps together they might have defeated Lyr. But Ras, with lightning thought, had decided otherwise. Let them battle each other alone while he stood aloof, conserving his forces. Harg, he felt certain, would be destroyed in the process, as indeed it was. There were possibilities in the unified structure of Lyr and its totalitarian economy that intrigued him. With such a forged weapon at his command nothing on Earth, nothing from the planets, nothing even in the distant reaches of interstellar space, could stop its irresistible advance.

Therefore, in the instant that Vardu flamed into a blaze of fiery gas, he acted. He sped along the curved potentials of his expansive thought toward the point which he had predetermined on before.

Within the inner, slowly whirling ring of Lyr a brain man flashed sudden alarm. But even as his rotating figure pulsed its message to the others, it was too late. Ras, grim and bulging, materialized at his very throat. A shimmer of force touched the startled brain man. He pulled out as a thin trickle of smoke. Ras slipped into his place, whirled exactly as he had whirled, held with nice attention to axes and vectors the position of the cellular brain man for whom he had substituted so ruthlessly.

The three concentric circles quivered, hesitated in their endless gyrations the split millionth of a second; then took up their whirling round as though nothing had ever changed.

Ras had become an integral cell in the interdependent brain of Lyr!

He had anticipated just such a result. With his powerful thought-tentacles he had probed the structural base of Lyr, and plotted his course accordingly. Component brain men of Lyr would age and die, just as individual beings might. But at the instant of their death fresh, newly manufactured cells would spring

at once into the proper place in the orbital swing, so that the brain as an entity would remain unchanged, immortal in its continuity.

Ras settled himself into his orbit with a grin of satisfaction. Everything had worked out according to plan. He was a constituent member of the great brain that directed the unitary organism known as Lyr. His mind, evolved through countless centuries, he knew to be mightier than that of any individual cell of Lyr. It would therefore be an easy task to assume overlordship of the whole. An irresistible weapon, tempered, compact, terrible was at his command.

None of the other gyrating brain men seemed to have noticed the alien substitution. Placidly they continued on their interminable wheels, building up potentials of electro-magnetic energy by their patterned turnings.

Ras chuckled silently, and thrust out his mighty thought-shell. He would take over, but, as he gathered up resources for the outpouring of his will, a strange thing happened. Filaments of thought, of interrelated energy, webbed him in from all sides. He felt them coursing subtly through his mind; he felt his own thought processes reach out and interpenetrate in similar fashion the minds of all the others. He seemed to bathe in a universal bath of merging energies; he was one with his fellows and they were one with him!

At first he tried to fight against the lapping bath. But his individuality began to slip away from him; he was a part of a whole, a being incomplete in himself but vigorous and mighty in the totality. It was pleasant, soothing. He had never had such an experience before.

With a violent effort he retracted his thought-shell back into himself. He had not bargained for such a disencumbrance. He, individual of individuals, to be a

mere-cog in an organism! For the moment he was frightened. There might still be time to break loose, and see this tugging interplay. Then he grinned again.

Very well then, he would remain and become a cog. But inasmuch as his solitary, giant intellect was greater than that of any other single cell, though inferior to the totality, he would not waste his energies in violent attempts at alien domination. Instead, he would merge himself, adjust himself to the whole and its interrelations. By so doing, imperceptibly, his plans would interpenetrate the thought-processes of the others, feed in turn on their giant unity. Together they would make up Lyv. He would lose his individuality, it was true, but the greater Lyv, of which he would be a part, would turn to the things he had passionately desired. From a peaceful, self-contained creature, content with its present status within the narrow confines of the Mediterranean, Lyv would move toward restless conquest and subjugation of the Universe.

He adjusted his thought-shell accordingly, not knowing that he could not help himself. It was a strangely pleasant sensation. An ecstasy of merger of greater unity. The concentric circles continued to whirl gravely on their ordered paths, without a hitch, without a tremor.

BELTAN was the first to feel the alien turn of events. Queer pluckings at his brain, feeble at first, but momentarily growing stronger. He stirred uneasily.

"Something has taken place in the brain of Lyv," he spoke low into his microphone.

"What?" demanded Sam.

With a firm gesture the Olgarch pulled the master switch of the motor-sensory machine. It was an emergency switch, to be contacted only in the almost inconceivable possibility that the economy of

Lyv had gone haywire and the brain men had failed to take over.

Every member of the organism, outside the Brain chamber, came to a sudden, immobile halt. All activity paralyzed. Scavenger men, neurones, tactile men on the periphery, warders of the manufactories and regulators, all the numerous functions of Lyv stopped in their tracks.

"Hey, what's the idea?" yelled Sam.

But Beltan's gaze was directed with curious intensity upon the single channel that remained open. The channel that connected his globule with the master chamber of the brain. On such a pulling of the switch, a warning impulse leaped with the speed of light to the errant brain which, thus warned, could make the necessary adjustments to redeem the perilous situation that had, theoretically arisen.

The brain began to wheel faster. The disks of multicolored lights on its curving walls flashed on and off with blurring speed, as Lyv scanned all of its vast organism for signs of danger.

The Olgarch's eyes widened on the whirling figure in the inner ring. A figure alien to the others. The figure of Ras of Asso!

Recognition was mutual. Ras glowed with curious luster; the visible shell of his thought reached out for his fellows, bathed in their filaments in turn. Slowly, but surely, he was inducing a single, unified thought; a single, powerful will.

"Quick!" shouted Beltan. His face paled; then veined with furious energy. "Ras has merged with Lyv! He's in the brain! Smash every instrument; cripple him as long as possible. Our lives, the lives of every hidden race upon Earth depend on it."

He snatched up a bar, smashed down with powerful, crashing strokes upon the delicate machinery. Tubes splintered into a thousand shards, metal crunched under his blows.

Sam did not wait for a second warning. He caught at a similar bar, heaved with all his strength. In the distance he heard the great strokes of Kleon as his heavy sword rose and fell.

Stirring activity in Lyv froze suddenly again. Tactile men, scavengers, motor-sensory components, remained exactly as they were. Paralysis gripped the city once more.

Even the brain chamber slackened its swift pace. The interchange of energy became feeble, dulled.

"What next?" shouted Sam.

"If we could get to the brain-men before they work up new potentials, we might blast them all out of existence, and bring Lyv with its new member, Ras, to an end."

Sam thrust a swift look overhead. "The Mediterranean is closing up above us," he said grimly. "O. K., we die in the general ruin. Come on, Beltan."

"It's too late," cried the Olgarch in accents of utter despair. "Ras is reviving the whole. He wasn't completely merged yet. Look!"

A wavering shell of iridescent thought was beginning to form, with Ras as the center. It lapped out over the feebly moving brain men. Wherever it touched, action quickened. Slowly the wheels began to pick up speed; slowly the wave of energy began to move outward.

Silent machines quivered and moved; silent, paralyzed units in its path galvanized and drifted toward the central chamber where Beltan was.

"We've lost our chance," gasped Sam. "They'll kill us sure. Ras will see to that."

Beltan aimed his electro-blaster. "We'll die fighting," he said whimsically, "just as friend Kleon is ever wont to remark."

Sam whirled. "Jumping catfish!" he exclaimed. "I forgot all about him.

Where the devil is that Greek?"

"Right here, Sam Ward," changed a cheerful voice almost in his ear. A strong arm reached out, caught him around the waist, lifted him as easily as if he were a child.

SAM fell into the bottom of the rocket-ship of Harg with a little thud. He scrambled to his feet. "Holy cats, Kleon! What, . . . what—"

Kleon stood in the prow of the boat, his hand gripping the controls, his eyes burning on the curving channel through which he manipulated his craft with masterful touch. Red blasts of flame jetted behind, making thunderous roar in the confined quarters.

"While you and Beltan, men of advanced civilizations, were so full of plans for saving all Earth," he said ironically, "I, a poor, primitive Greek of Alexander's time, was engaged in more limited, practical things. When Beltan temporarily paralyzed all Lyv, I reced for the globule in which our old craft had been stored. Luckily, the rocket jets kicked into instant action and here I am. Now if we can get to Beltan in time—"

But the Olgarch had already seen what had taken place. He leaped out of his globule, came racing down the channel to meet them. Sam caught him up as Kleon slackened speed.

"Give her the gun now," he shouted about the thunder of the rockets. "It's going to be close. Behind us, the widening influence of Lyv; ahead, the fast-tumbling waters of the sea."

Kleon had never heard that early twentieth-century expression before, but he knew what Sam meant. He grinned and stood erect. Like a Greek god he was, with helmet plume and golden hair streaming with the wind of his flight. The silver ship leaped forward in a fierce rush of acceleration.

Behind them, almost touching, sped the electro-magnetic wave of Lyv. In

its wake scavengers sprang to life and darted like divers after them, eager arms outspread, tipped with deadly currents of instant destruction.

In their path silent, unmoving men swayed gently in the stagnant air, still held in the paralysis of the broken machines. The flaming rocketship smashed into their yielding bodies, ripped them into spattering blobs of flesh, thrust them behind like refuse in the wake of an ocean liner.

Bektan said with expressionless face. "It's a pity! Those poor creatures—"

Sam felt a little sick. But Kleon was hard and with the hardness of practicality, of one who had long been accustomed to mangled flesh and sudden death. "It's our lives or theirs. They will be replaced; but we have no such assurance."

Slowly, but surely, they pulled away from the fast-coming waves of force. But ahead, new and more hideous peril threatened. "We'll never make it," groaned Sam.

The tumbling Mediterranean, long withheld by the fierce concussions of disintegration, was rushing in once more to claim its own. As far as the eye could see, sky and water mingled in inextricable confusion. Chaos reigned supreme, as at the beginning of the world. Huge waves, hundreds of feet high, bore down upon the collapsing vacuum from every point of the compass.

Faster, faster they sped, falling with breath-taking velocity into the gap that had been rudely torn in their midst.

Already, from crest to crest, barely a few hundred yards remained. When that closed, three hundred feet of boiling, savage waters would interpose between the fleeing rocketship and outer safety. Then Lyv would catch up to them, and Ras, the new component, would deal with them in his own manner. They knew quite well what that manner would be!

The fleet ship was straining every brace and strut. The rocket jets were wide, every ounce of power inherent in the fuel hurled them forward on their path.

But tremendous as was their speed, the crashing overhead sea was faster. The gap narrowed in great clamping chunks. The ship would be caught—

The sweat poured from Kleon. His muscles strained on the controls to extract the last drop of power. "I can't do any more," he cried.

The Olgaech knelt suddenly at the firing valve, twisted.

"Hey!" shouted Sam. "You'll blow us all to kingdom come! Don't open that!"

But Bektan did not seem to hear. His swift, efficient hands turned rapidly. The heavy valve came open. Within, the startled twentieth-century man could see the smooth leap of burning gases, hurtling out through the jets, propelling the ship forward by their fierce recoil. The valve was there for priming when the jets were cold or failed to function in starting. Never, however, had it been opened while firing was in full blast.

Bektan unbuckled his electro-blaster, swiftly thrust the barrel deep into the orifice.

"Well, I'll be damned!" barked Sam. He saw now what the Olgaech was trying to do. A desperate expedient, dangerous to the nth degree. But the situation called for desperate measures. The electro-blaster shot forth bolts of pure energy. Concentrated power that could blast down anything in its path except the primal energy of thought. Joined to the already straining impacts of the rocket gases it might furnish that last fillip, that last extra kick to accelerate them out before the waters closed.

Sam held his breath. Kleon maneuvered with desperate intentness through the broken outer field of Lyv. The tidal sea was barely fifty yards away.

Bekani pressed the plunger, again and again. The blue bolts of power hurled to join the rocket blasts. The silver ship shuddered and groaned. It leaped forward in wild new acceleration.

Out between gray walls of falling waters it fled; out into the limitless expanse of atmosphere and burning sky. Beneath, the hungry sea collapsed with an angry roar, barely five feet away. The Mediterranean boiled and seethed, once more a solid, unrestricted whole, shielding within its womb the city of Lyv.

Kleon leveled off at ten thousand feet, set the prow westward. The Olgarch, calm, inscrutable, twisted back into position the open valve, rose to his feet, the exhausted blaster in his hand. Saying nothing, he breathed in the fresh, keen air.

"Where away now, friend Sam?" demanded the Greek with a grin.

Sam Ward stared at the limitless horizon. His face was a taut mask. "Look back! A more dangerous foe has risen," he said harshly. "Ras in conjunction with the horde of Harg was bad enough. Ras, as an integral part of the unity of Lyv, is far worse." He flung out his arm toward the setting sun. His eyes burned. Lyv was changing, lumps breaking away. The city was sending forth pseudopods—descendants!

"Out there, somewhere, is the answer. A city of decent, kindly folk—men of our own kind. Men who are free and therefore invincible. Men who will help us destroy this new peril to the world of the future. Point west, Kleon; always west!"

ON A FROSTY MORNING - WATCH YOUR BREATH TRAVEL

BAD BREATH TRAVELS AS FAR

SEN-SEN
FOR THE BREATH

TASTY SAGE
SWEETENED TO
PERFECTION

DON'T OFFEND...USE SEN-SEN

BREATH SWEETENER...DELIGHTFUL CONFECTION

SCULPTORS OF LIFE



By WALLACE WEST

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New bodies for old! New life for those who wish it! And—artistic temperament among the life-sculptors can change a plan or two—

By Wallace West

Illustrated by Schaeffer

"I'm sick of this. I'm fed up, I tell you. I sit down!" Marion Onethree-nine hurled her scalpel to the floor, dropped her curly brown head on the operating table and began to sob.

"What's the trouble, child?" Frank Sixfourtwo looked up from his work of putting finishing touches on a husky torso, then crossed the room and patted the girl's slim shoulder. "This night work too much for you?"

"It isn't that, Frank." She rucked back and forth miserably without looking up. "It's just that . . . well—" She shook off his hand, jumped to her feet and pointed dramatically at the masterpiece she had just completed.

"Look at her!" she raged as she blinked the tears out of her blue eyes. "The best job I've ever turned out. Perfect! With a liver Mother Nature couldn't duplicate and a heart that's good for a hundred years. I've given her the final tests and she hits on every synapse."

"She's a beautiful job all right," Frank admitted as he gazed with admiration at the body of an exquisite blond girl which lay on the table in a blaze of light from the overhead lamp cluster. "The finish is practically perfect. That's why they have you work on the girls, I suppose, while I do men. But I still don't see what you're making such a fuss about."

"I'm making a fuss, as you call it, because of what's going to happen to-mor-

row," Marion almost screamed. "You know who gets her."

"Princess Anne Libenscu, isn't it?" he asked. "She's the client who asked for that special liver job."

"Princess Anne Fiddlesticks!" Marion stormed. "Royalty went out of fashion three hundred years ago. Princess Anne is just a disgraceful old trollop and you know it. Drinking like a fish—getting a divorce or burying a husband every six months. There ought to be a law!"

"But what does it matter to you how she acts?" He was trying to soothe her as he always did when Marion got into one of her rages. "You've done your job when you turn over the new body in good condition."

"It's pride of craftsmanship, I suppose. I just can't bear to think of the way Princess Anne's going to treat a thing which I have made. Look at the last body I did for her. It was perfect, too, but she's ruined it—absolutely ruined it, in only twenty years. And now she has the nerve to ask for a rush job so she can look her best for that reception to the British dictator on Thursday. I work my fingers to the bone and I won't even get thanked. The union's going to hear about this!"

"You know, I've been thinking along the same lines today," Frank swung one long leg over the edge of the operating table and sat there idly twining a

strand of the girl's golden hair around his finger. "Take this body I've just finished for Henry Wharton—"

"The richest man in the world," she interrupted softly.

"And the oldest. He told me all about it last month when he was in here with his bodyguard, having his measurements taken. Back in 1980, when Professor Franck discovered his method for physiological duplication, it was a terrifically costly process. Wharton was a millionaire even then, and his gambling instinct led him to take the chance when his health broke down. In the four hundred years since then he's worn out six bodies. You'd think he'd have the decency to get bored, accept euthanasia and let someone else have a chance. But, no, he sits at his desk sixteen hours a day, ruins his digestion with synthetic foods and pyramids his fortune up and up—and up."

"Until he owns half the world," added Marion.

"And every seventy years, on the dot, he comes round and orders a duplicate of the splendid body he had as Yale football star in 1940. There it is. All done," Frank nodded toward the other table upon which lay the semblance of a powerfully built, handsome young athlete.

"Maybe Wharton will meet with an accident some day," hazarded Marion. "Then his money will revert to the people and America will be free again."

"Not that smart old codger. He takes every possible precaution—has an army of bodyguards and another army of doctors. He'll live forever. Why, even that law about all fortunes reverting to the State when their owners get tired of living—he had that passed so he could get such money into his clutches more easily. You know, they even say he owns the British dictator. That's why the fellow is visiting America."

Marion tossed back her hair with an angry gesture and started pacing back

and forth across the little shop with long, hitherto strides.

"And there's nothing we life sculptors can do about it," she raged. "We sit at the crossroads of life and death. Maybe if we struck—"

Frank laughed harshly.

"Oh, don't be so cynical! I know as well as you do that strikes have been forbidden. If you're so smart why don't you make a suggestion?"

"I've been thinking about it, buttercup," he grinned. "But before we talk, let's get out of here. I never can convince myself that these things don't bear every word we say."

"Fine. I'm dog-tired and starved. We've just got time to catch the midnight gyro."

MARION ran to her locker and soon was wriggling into her dress—a woolly white affair, complete with hood, mittens and reinforced feet. It looked much like a child's sleeping garment, gave her the general appearance of an Easter rabbit and provided perfect protection against the midwinter cold outside.

Frank donned similar garb after pulling down heavy glass covers to protect the bodies and adjusting various thermostats and air pressure gauges. Then the two life sculptors locked and barred the doors of the laboratory and sprinted for the gyro station which towered blackly against the stars not far away.

"I wonder how many centuries commuters have been running for trains?" panted Marion as they swung aboard the little car. "Sometimes I think we should move closer to the lab."

"No, this ride always gets me. I wouldn't miss it," answered Frank as the car swept up to connect with the express track which strode across the countryside on pylons three hundred feet high.

The Center, with its brightly lighted factories, stores and theaters, dwindled behind them and gave way to a suburban

residential strip. The car picked up speed and two minutes later hooked onto the Twenty-fifth Century Limited with hardly a jar.

"Wonder what it must have been like to live in the cities which existed before the great earthquake," whispered Frank as they tiptoed through several pullmans in order to reach the Pennsylvania local. "Skyscrapers, towering apartment buildings, subways—"

"And slums and dirt and overcrowding, you old reactionary," Marion teased. "We'd be living in a one-room flat with in-a-door beds. No, I like the Road-town plan better. What would you do without your garden?"

"And without your ducks and chickens to eat my lettuce, beans and cabbage," he laughed as they reached the almost empty local, found seats by the window and switched on the television screen in the back of the seat in front of them.

Center after Center flashed beneath them like jewels on a chain as they watched the carefully censored news program which tonight dealt mainly with spectacular arrangements being made to welcome the British dictator. Other local cars were picked up and detached at various points and finally, deep in the Adirondacks, their own car left the main train and swooped down for a brief halt at an isolated station.

It was even colder here. Their breath shone white in the moonlight as they ran to their auto and headed for their cabin, which lay up a nearby canyon.

"Gee, it's good to be home," cried Marion as they entered the cosy living room. She shucked out of her dress and tossed it across the sofa. "I'll make some coffee and scramble some eggs. Then we'll talk."

"Here's what got me to thinking," Frank held up a thin metal volume as she returned with a steaming tray of food. "It's a swell yarn by an almost forgotten English author named

Stephenson, or Stevenson. This new system of spelling phonetically makes it hard to decide how he really spelled his name."

"Your coffee will get cold," interrupted Marion.

"All right. All right! This chap wrote a story called 'Dr. Jekyll and Mr. Hyde.' Only both of them were really one person—schizophrenia, you know, only this is all cockeyed scientifically—"

"Do you have to talk with your mouth full?"

"WHAT I'm trying to get at," he concluded after a gulp, "is that these different characters, one good and one bad, finally separated into different beings and—"

"How perfectly preposterous, Frank. Maybe it's the way you tell it."

"Tain't not! Young lady, you're much too brash tonight. Step up your brain power and answer carefully. Why is it that, although we can make bodies as easily as salamanders can grow new legs, we can't animate those bodies without transferring living personalities into them?"

"Because, silly, all thought is a chain of relations and we haven't yet discovered how to create an initial thought which will start the brain ticking. In other words, we don't know how to generate a spark for the engine we've made. We've got to transfer the ignition system from an old engine."

"Correct. So we record an impression of all the past experiences and acquired knowledge of the person to be transferred on the cortex of the brain we've made, use the Franck exciter to switch the psyche, soul or whatever you call it, onto its new track, wake the new body, destroy the wornout one—and collect our pay."

"Well, go on," said Marion. "What's the point? I'm getting sleepy."

"Just this." He poured himself another cup of coffee, lit a cigarette, then

forgot them as he leaned forward tensely. "You were squawking because of the necessity for turning over those nice new jobs in the lab to persons who wouldn't appreciate and take care of them. But you know what would happen to us if we butched or refused to make the transfer."

"Umm!" She smiled wryly. "Drink your coffee."

"On the other hand, there's a lot of good in Princess Libenscu—"

"Yes, she's kind to dogs."

"Come, come! She's a patron of the arts, plays the color organ beautifully and gives a lot to charity and public works. Now let's consider Wharton. He's a hard-fisted slave-driver. Half the productive capacity of America pays tribute to him." On the side of the shield he's a patron of many football and head-ball teams as well as an economic genius who has at last discovered how to eliminate recessions."

"Yeah, Frank. He spreads recessions and recoveries out thin, like butter on bread, and expects us to worship him because we can no longer tell the difference between them. You talk like a twentieth century liberal."

"Oh, for Heaven's sake! Now listen carefully. If we could, somehow, manage to transfer only the better sides of the Princess and Wharton when they come in tomorrow, wouldn't we be conferring a great benefit on humanity?"

For a long moment Marion stared at him dumfounded. Then she jumped up and began pirouetting about the room.

"Oh, what a perfectly swell idea, Frank," she cried, when, exhausted, she flung herself on her mate's lap and gave him a bear hug. "But how are you going to do it?"

"Very simple." He thrust out his chest under this praise. "We'll use hypnosis. Psychiatrists have been doing it for centuries to stick split personalities back together. We'll just reverse the process. Now my idea is that if—"

"Wait a minute." She jumped up briskly. "This calls for more coffee, with maybe some brandy in it. We've got a lot of fighting and calculating to do this night, my friend."

SMILING like conspirators and carrying a heavy suitcase between them, Marion and Frank arrived at the laboratory early the next morning and set about their preparations. A hundred years before, the Life Sculptors' Union had won the right to exclude witnesses from all transfers, so they knew they wouldn't be interfered with. If, however, their experiment resulted in injury to either of their patients—Marion turned white whenever she thought of the consequences.

Working in that perfect harmony which is born only of close association for many years, they set up the complicated cosmic ray apparatus known as the Franck Exciter, in honor of its twentieth century inventor, Professor Elmer G. Franck of Princeton University. Then they laid out the drugs necessary to produce the requisite amount of mental shock in the patients to be transferred.

With a wink at Marion, Frank next "dragged out of his suitcase the latest device for inducing hypnosis. This was a complicated thing of revolving lights and mirrors, connected with a sound tape and loud-speaker.

"Practically foolproof," he commented. "We used it a lot during the short course at the university last summer. Want me to try it on you? It will reveal your inmost thoughts."

"Not on your life, you wicked thing," she laughed, conscious that he was watching her admiringly as she adjusted the box above the table on which lay Princess Anne's future body. "I'll keep my own counsel."

"Then we'll have to juggle our thumbs until the princess arrives. She's due at ten, isn't she?"

"That means eleven and also that

Wharton will have to wait. He'll lose a million dollars by being away from his office."

"Let him! Are you all set on what we've got to do?"

"I . . . I think so. But look, Frank, if half of the princess' personality—the worst half, I'll admit—stays in her old body, won't it be murder to—er—dispose of it?"

"We-ell, maybe you could stretch a point and call it that. I'd rather call it poetic justice."

"And what if this operation doesn't work right? What if we find that a personality can't be split permanently?"

"I don't like concentration camps any better than you do, honey. Maybe we'd better keep the old body in suspended animation for a spell until we see how things work out."

"We're taking a big chance, keeping it around."

"We're taking a big chance, anyway." He squeezed her reassuringly. "If you back out, it's O. K. by me."

"Calling me yellow now, are you?" She pretended to be furious. "Let me tell you this, young man. Never, in the hundred and fifty years that I've lived, have I—"

She was interrupted by a whirring signal from the reception room.

"For the love of Mike!" gasped Frank. "Anne's here, right on the dot. It must be because of that reception. Well?"

"I'm game," answered Marion tensely. "Have her sent in."

FRANK PRESSED a button. A moment later the door of the lab opened and a caricature of the blond girl on the operating table swept in upon them. In another age Princess Anne Labenscu would have been called well-preserved. Her color was too high. Her hips had become too large. Her throatline sagged. She wore archaic high-heeled shoes, an idiotic little hat and was smoking a black marijuana cigarette in a long holder.

Her arms, ankles, waist and shoulders were loaded with expensive jewels.

"Oh," she twittered. "I'm so glad you're all ready. I've so many things to do today, what with the dictator's reception and everything." She extended tobacco-stained fingers for Frank to kiss and flushed when he did not do so. "My, my," she continued when she had regained her poise, "it seems only yesterday that I came in for my tenth body—and it's been twenty years."

"If you'd taken care of yourself, it would have been seventy years," remarked Marion sourly as she gazed upon the wreckage of her handiwork. "You certainly must have influence at Washington."

"No insults, young lady. I remember you. You always were insufferable."

"Take off that junk and get under the light shower," Frank snapped back at her.

"Are you implying—"

"We've got to make your body as hygienic as possible before starting the operation. Please do as I ask."

"I . . . I'll call my maid." In spite of herself the princess was somewhat overawed.

"No maids allowed in here. And you needn't look at my associate. Do it yourself."

Pouting like a spoiled child, Princess Anne discarded her shoes, hat, jewels and cigarette holder and stepped into the blaze of cleansing light which Frank switched on for her. Under the shower of rays the powder, paint and perfume were washed off and the patient looked even older and more dissipated than when she had arrived.

"What do I do next?" Completely crushed by her ugly nakedness, she was almost whining now.

"Lie down on that table beside your new body, relax and fix your eyes on this mirror. In half an hour you'll awake in your new body."

"That mirror's something new." She

was trying to be nice now as she held out her flabby arm for the injection. "I don't remember it from last time. Why . . . why it looks like—"

"It's just to make the transition easier," Frank assured her hastily. "You said you were busy today."

"Oh, yes. The dictator." Suddenly her voice was very tired. "All right. I'm ready."

Frank pressed a switch. The laboratory lights dimmed. The little mirror began to spin.

"Sleep," whispered a magnetic, compelling voice from the loud-speaker of the hypnotizer. "Sleep. Sleep. Dream deeply. Sleep."

As the standardized ritual was repeated and amplified, Frank watched the princess closely, changed the combination of mirrors, speeded up the tiny pencil of light until it was flashing across her eyeballs at heartbeat speed. Her gaze became fixed. Finally her eyelids fluttered down and she began to breathe heavily.

"Fine, so far," he whispered, pressing Marion's cold little hand.

"Princess Anne," he then said sharply. "Are you asleep?"

"I'm asleep all right, you impudent young whelp." Her lips twisted scornfully, but her eyes did not open.

"What's the date?"

"February 16, 2345."

"What are you going to do tonight?"

"I'm attending a reception for Haldane B. Seventynethree, the British dictator."

"Why?"

There was no answer.

"Tell me. Why are you going?"

"Because he's a bachelor, you fool. Because I intend to entice him with my beautiful new body." The droning voice hesitated.

"Go on."

"Because I'm sick of truckling to Henry Wharton. Because the dictator will be putty in my hands. Because I

want to make Wharton crawl to me. He's the only man who has never done so. If there has to be a war to accomplish it, fine. What do I care? What do I care? People are only vermin, anyway. I should know. I'm vermin—myself."

THE voice trailed away, leaving Frank and Marion staring at each other in white-faced horror.

"Mr. Wharton is here." The voice of their receptionist coming through the annunciator made them jump. "Says he's in a hurry."

"Tell him to wait." Quickly Frank adjusted a resonator disk until it was pulsating a faint middle C note through the room.

"Do you hear that tone, Princess Anne?" he demanded, bringing the disk close to her ear.

"Yes. . . . I . . . hear it." The words were almost inaudible now.

"Sleep then, until the tone stops, Princess Anne. Sleep."

"There." He smiled grimly. "That half of her is trapped. Now watch what happens."

"Annie Smith!" he barked, while Marion looked at him in amazement. "Annie Smith. Are you there?"

There was no answer.

Leaning close to the princess' ear he shouted: "Annie Smith! I command you to answer!"

The woman on the table writhed and twisted as though in agony.

"Annie Smith!" he thundered. "I'm your friend. Answer me!"

"Who's Annie Smith, for Heaven's sake?" gasped Marion.

"Shhh!" He angrily waved her to be silent, then repeated: "Annie Smith. Answer me at once."

The princess opened her lips—closed them. Then her mouth opened again and a weak and timorous voice said: "Who calls Annie Smith?"

"A friend. Tell me the date."

"I've been asleep," whispered the voice. "Why do you disturb me? I . . . I think it's 1940. But I'm not sure—it's so dark."

"How is your music getting along, Annie Smith?"

"Oh-h-h! Don't." The princess' throat twisted in a sob. "I can't—"

"Tell me!"

"My teacher—the best in New York—told me today that I will never become a great singer. I had so hoped—studied so hard. Now all my money is spent on lessons, and he says— Oh, please let me sleep. I want to sleep forever . . . to die—"

"Where are you going tonight, Annie Smith?"

"There is a reception—at the home of Samuel Wharton, the banker. It's for Princess Libenscu of Rumania. I'm to sing—but only in the chorus. I'm so hungry. I'll make a few dollars. And mother—Bobby—need money so."

Quickly Frank adjusted another resonator disk until a second faint tone was humming through the room.

"Do you hear that, Annie Smith?"

"Of course. It's an A."

"Follow where it leads, Annie Smith. Now sleep till I call you."

"Mr. Wharton is getting very impatient," came the metallic voice of the annunciator. "He had an appointment here at eleven. It's almost twelve now."

"Tell him to climb a tree," rasped Frank. "No. Better tell him we'll be ready in a few minutes."

With a nod at Marion he began strapping a conical contraption much like a permanent wave setter, on the head of the princess. She did likewise, placing an exactly similar exciter over the curls of the blond girl.

"Ready?"

"Yes!"

THEY SNAPPED switches simultaneously. As the apparatus blazed up, sur-

rounding the two heads with nimbus of ghostly light, and as the eerie clckety-clck of the cosmic ray counters filled the room, Frank leaned weakly against the operating table and wiped his perspiring forehead.

"Fifteen minutes should be enough to transfer everything in that empty head," he grinned.

"But, Frank!" His assistant gripped him by the shoulders and shook him in exasperation. "Where did you learn all that. I never—"

"It's in those dusty old newspapers and magazines with which I clutter up the cabin. Made a great scandal back in 1940. The prince fell in love with Annie Smith at the reception—eloped with her, in fact. It's pretty certain that she despised him, but, as she just said, she had to eat. Anyway, everything worth while and fine in the girl went to sleep that night. Since then she's been Princess Anne, hard—worldly—cruel—bitter. Ready to involve the world in another bloody war to gain her ends."

"It's dreadful! I almost wish we hadn't started this."

"Nonsense. Hey! Your tubes! They're overloading!"

They worked feverishly to balance the apparatus, then watched in silence as the minute clicked by.

"There," said Marion at last. "That should about do it."

They depressed their respective switches. As the light died they removed the headsets from the bodies on the table. Then Frank swung the hypnotizer in front of the golden girl's eyes and carefully pressed back her eyelids.

"Annie Smith," he said gently after the apparatus had spun for a few moments. "Time to wake up!" He cut out the A resonator.

The old body remained motionless but soft, crimson lips of the new one beside it parted softly as it took a long, shuddering breath.

"I hear you," the lips whispered. "Annie Smith is waking."

Marion shot a heart stimulant into the lovely arm. Breathing immediately became stronger and more regular. Five minutes later Annie Smith—in the body originally intended for Princess Anne—was sitting on the edge of the table and staring at them with wide and uncomprehending topaz eyes. At last she glanced down at herself.

"Please." She blushed from head to foot.

When Marion had wrapped a sheet around her, Annie relaxed and studied them with growing puzzlement and worry.

"Who are you?" she haltingly inquired at last.

"I'm Marion and this is Frank. You've slept a long, long time. Try to understand what I'm going to tell you. We're life sculptors and—"

"But I do begin to understand. I remember your faces—somewhere. Didn't I come here to—" She twisted around and stared at that other body on the table—that pitiless vulgarization of herself which now lay as though dead except for its regular breathing. Then, before they could catch her, Annie Smith leaped from the table and shrieked—a wild cry like the keening of a lost soul. "Oh," she wailed as she backed against the wall and stared at them in growing fear. "Oh, what have you fiends done to me?"

"What on earth's the matter, Miss Smith?" Marion rushed to her. "You're safe here. We're your friends and—"

"My friends?" Annie threw back her golden head and laughed like a soul in torment. "Only devils could do what you've done!" Laughter racked her once more.

"But what have we done to upset you so?" Frank shook her savagely to stop the hysteria. "You're Anne Smith, a

girl who's been asleep for a while. Is that so dreadful?"

"Is that what you two young fools believe?" The girl became momentarily calm. "Yes, I am Annie Smith. And it's true that I've been asleep, as you call it, for four hundred years—"

"How did you know that?" they interrupted in unison.

"How did I know it? To sleep. To dream." Annie quoted bitterly. "And in that sleep who knows what dreams may come. Didn't you ever hear of Shakespeare?"

"Merciful God," whispered Marion, with dawning comprehension.

"Yps. I'm Annie Smith, all right. And tonight I'm going to a reception for Prince Libenscu—"

"That's right," Frank encouraged her. "And then what?"

"Why tonight I'm going to meet the only man I'll ever love. And he's going to get drunk and laugh at me. And in my horror and despair I'm going to elope with the prince, who is a silly fool, but who will ask me to marry him."

"Go on!" Frank's hands were shaking.

"And my love is going to turn to hate. And for four hundred weary years I'm going to plot and lie and even commit murder in unavailing efforts to destroy the man I . . . still . . . love."

"Stop!" cried Marion.

"Stop? How can I stop? The real Annie Smith was peacefully asleep. She went to sleep on that awful night and knew nothing about what her other self—Princess Anne—did after that. But now you've awakened her and she's remembering—I am remembering. God pity me. Mother—Bobby—What ever became of them? And the prince, poor devil—no one knew why he sickened and died so conveniently!"

Suddenly the girl began laughing and crying at the same time—beating her

fists against the wall—screaming—finally writhing on the floor in shame as the host of memories came crowding back.

The annunciator buzzed.

"Mr. Wharton says to tell you that his men will start taking this place apart in five minutes," came the harassed voice of the receptionist. "What shall I do?"

"What shall we do?" panted Marion as she bent over the hysterical girl.

"Give her a hypodermic. Put her to sleep." He pressed the annunciator button. "Tell Mr. Wharton we're about ready. Send him in in five minutes—not a second sooner."

"I know what's wrong," continued Frank as he helped Marion to lift the relaxing body back on the operating table. "I should be shut. Fool that I was, I transferred all of Princess Anne's evil memories into Annie Smith's new brain. No wonder she was overwhelmed."

"But what about Wharton?" Marion was frantic. "Let's call the whole thing off—do our job and stop meddling. I'm scared."

"No!" He set his chin stubbornly and swung the apparatus over to the other table. "We're gone too far to turn back. There'll be hell to pay, maybe, but I'm going to do the job right or bust." He yanked another conical headpiece out of a closet and began strapping it over his own temples.

"The transfer of the thought record, or memory, is chronological," he continued as he forced his trembling fingers to find the right straps and buckles. "I've often listened in on the process by means of a third headpiece. Now with Wharton, I'll stop the transfer as it reaches the day of that party to Prince

Lillemor." When he comes to, he'll be exactly what he looks to be—a Yale football star. The rest of his memories will stay in his old body."

"They tell me life in a concentration camp is pretty awful," said Marion.

"Look." He stared at her through the quartz eyepieces like a monster from some other world. "I'm too far into this thing to quit now. But you go out and tell Wharton you're ill—that that's the reason for the delay. Tell him I'll perform the transfer alone. That will clear you of any charge of complicity."

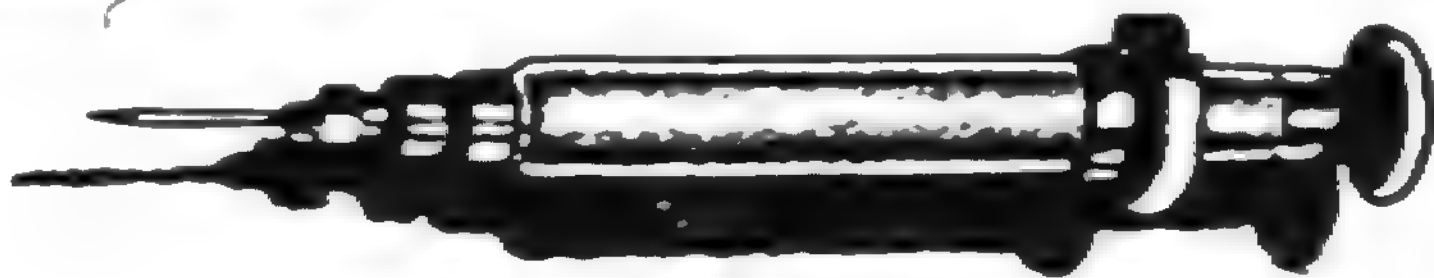
"You really think I'd do that, Frank?" She smiled at him with stiff lips, then pressed the annunciator button. "Send Mr. Wharton in," she commanded.

THE BANKER was on the verge of apoplexy when he burst into the room. In one shaky hand he carried an automatic. With the other he held open the door so that Frank and Marion got a view of the evil-faced henchmen crowding behind him.

"What kind of monkey business is going on here?" he shouted. "Nobody alive can keep Henry Wharton waiting. By Heaven, I'll—" At that moment he caught sight of the two female bodies lying side by side on the second operating table. Slowly his wrath subsided and an understanding grin spread over his heavily lined face.

"So that's it!" A chuckle grew into a bellow of laughter which made his flaccid belly shake. "Princess Anne was late again! Why didn't you tell me that she was causing the delay?" He slammed the door in the faces of his bodyguards and lumbered over to the table.

"The princess has been delaying me



for four centuries," he snorted. "You wouldn't think it to look at her, would you?" He laid his gun on the table. "That old harridan has caused me more trouble than any other person on earth. If it hadn't been for her scheming, I'd be a trillionaire by this time."

The banker waddled around the table and stopped beside the splendid body of Annie Smith. His dewlaps shook with what might have been emotion.

"This is the way I like to think of her," he said. "Beautiful as a new bank vault, isn't she? I could have prevented her being transferred this time if I'd wanted to. Might have saved me a lot of trouble. But I couldn't bring myself to do it." He stretched out a mottled old hand.

"Don't touch her!" Marion's voice was sharp.

"Oh, excuse me." For a long moment he still stood staring down at the golden girl. Then, muttering something that sounded like, "Young fools," he shook his great head savagely and turned to the other table. "All right," he growled. "Are you ready to spruce me up?"

The task of putting the banker into a hypnotic coma and separating his two personalities was not the difficult job Frank had expected it to be. At first Wharton struggled fiercely against the influence, it is true, but he soon succumbed.

"There seems to be a sharp cleavage," the sculptor whispered to Marion. "Almost as though he had lived two separate and distinct lives. Ready?"

"What resonator tone do you want to use this time?"

"Put him on the C with Princess Anne. We don't want to get things too complicated."

"Banker Wharton," he said sharply, as she pulled a watch-sized disk from its receptacle and set it humming close to

the old man's ear, "do you hear that note?"

"I hear it."

"Sleep then so long as you do hear it."

"I . . . am sleeping." The guttural voice seemed querulous—almost resentful.

"Now," said Frank to his partner, "I'll have to try something tricky for I don't have a second name to conjure with. Here's where my old newspapers come in handy again."

Leaning close to Wharton's ear, he shouted:

"Forty-two — seventy-three — five — Hike!"

The palsied fat body jerked as if it had been electrified and tried to rise from the table. Frank pressed it back.

"That you, Hy?" he asked casually.

"Yes, sir." The voice that answered was strong and somehow, young. "I thought I heard my signal—but it's dark."

"What was that play I just called, Hy?"

"I'm sorry, sir. It's a Yale team secret. You might be a spy from Harvard."

"Do you hear this note?" Frank reached for the A resonator which he had previously used to fix the personality of Annie Smith and swung it close to his patient's head.

"Yes, sir."

"Go back to sleep then. When I turn the tone off it will be game time and you must wake up."

"Yes . . . sir." The voice receded to a whisper.

"Now," Frank smiled at Marion, "we'll have to be careful." He stepped down the speed of the exciter as far as it would go, then nodded. They flipped the switches together and he stood listening intently to the thoughts being

transferred while the cosmic rays clicked.

"Not a bad kid at all," he said softly, after five minutes had elapsed. "Wharton's mother must have been a fine person."

"He certainly was good at athletics," he added some time later. "Worked out the plays mathematically. Do you suppose that had anything to do with his becoming a wizard at finance?"

Frank's lean face was a study in concentration as he continued to listen while the minutes ticked by.

"Poor devil," he sighed at last. "He wants to be a scientist, but his father—Samuel Wharton—insists that he go into the banking business. At first he rebels—he's crazy about mathematics. The old man cuts off his allowance. The boy starts working in the bank. Hum-m-m! This is interesting." He fell silent.

"What's interesting?" Marion was dying of curiosity.

"Oh, I'm sorry. He's becoming fascinated by the complexities of international finance—believes that his father's fortune, if rightly used, can bring order out of the chaos which resulted from the second world war." Frank shut his eyes and listened more intently. "But the poison is beginning to work. He doesn't know it consciously, but already he's playing with the idea of making money for money's sake, of pitting his wits against the other wolves, of—Hey! Quick! Cut your switch!"

As Marion obeyed and the click of the exciters died, Frank jerked off his headpiece with impatient fingers.

"What happened?"

"That reception to Prince Libenson! It sneaked upon me. When we cut the switches Annie Smith had just entered. I could see her, almost as clearly as though I had been there, through young Wharton's mind. His first impulse was to pick her up in his arms—carry her off like a knight of old. Then his newly-

developed subconscious personality came to the fore. Why should he spoil his career by marrying a nobody? Lord! I hope I cut those switches in time."

"Frank, have you any idea what you're really trying to do?"

"I'm just playing a hunch," he admitted wryly. "The biggest hunch I've had since that time at the Kentucky Derby. If it fails—"

He shrugged and shut off the A resonator.

AS THE TONE DIED the athletic body which the life sculptor originally had built for Banker Wharton stirred uneasily, stretched, opened its eyes and a moment later swung its muscular legs over the edge of the table and blinked around the room uncomprehendingly.

"Hello, Hy." Frank tried to keep his voice casual.

"Hello," answered the youngster. "I thought— You said—" He caught sight of Marion then. "Where am I?" he gulped. "I must have dreamed. It seemed to me that I was at the reception for Prince What's-his-name. Did I pass out?"

"You certainly did." Frank tried to grin reassuringly.

"I did have an awful load on last night. Is this a hospital or, uh, a Turkish bath?" He flushed with embarrassment.

"Sort of both, I guess."

Hy rose and stretched. "Feel all right now," he laughed shamefacedly, "except that I'm prickly all over. Who's this ugly old codger snoozin' on the table?"

"Another victim of the party. He'll come around."

"Don't remember meeting him. I must have been blotto."

His eyes wandered slowly over the unfamiliar equipment of the laboratory, then stopped with a jerk as they discovered the bodies of Princess Anne and Annie Smith.

"Say, what is this?" he yelled. "I remember that girl, all right. Did all the guests pass out?" Clutching the sheet about him, he stalked across the room and stood staring down at the golden girl in growing wonder and confusion.

"Lord! She's even more beautiful than I thought," he whispered reverently. "Who's the other one? Her mother?"

"Probably."

"Lord, how drunk I must have been," groaned the boy. "I fell head over heels in love with her the minute she came into the room. But instead of telling her so, I talked like a conceited fool—made an utter ass of myself. She'll never speak to me again and I don't blame her. Where are my clothes? I'd better get out of here before she wakes up."

As he spoke the last words, Annie Smith's eyes opened. No longer were they the frightened, tearful eyes of a hysterical girl, however. Instead, they were calm and very, very wise.

"I've been awake and listening for a long time," she said quietly. "That hypodermic must have worn off quickly. I heard what you two sculptors said, and I heard what the—the Whartons said. I think I begin to understand."

"Then you're better off than I am, Annie . . . Miss Smith," grumbled Hy. "This whole set-up—these queer machines and things—just don't make any sense."

"I can explain everything, Hy—if you want me to."

"Do I! And I've got some tall explaining to do to dad. I'm taking you home with me right now. And I'm telling him that I'm through with the banking business forever. And I'm saying that I'm going to marry you this very day—that is, if you'll have me."

"I will, Hy," Her smile was only a bit sad.

"Whoopee!" Young Wharton danced

a jig about the room. "Now," he cried at last, "where are my pants?"

While Frank was improvising a costume for him, Marion pressed Annie Smith's hand with admiration.

"Do you think you can manage things?" she whispered.

"Of course." The girl redraped the sheet.

"That costume will make you conspicuous when you go out."

"I know. But Hy will expect me to wear something. Princess Anne's dress is in the reception room, anyway. I'll do the talking when we step out. Then I'll bundle him into a car, take him to the princess' hotel and explain as best I can. After that we'll slip away somewhere—to the mountains or the South Seas—where he can find himself again."

"But what will Wharton's bodyguards say? Maybe you'd better let them take him home and explain afterward."

"I wouldn't dare. They'd force him back into the old rut. And no matter how fine he really is, the system soon would get him in its clutches and make him go the same way that one did." She nodded toward the body on the other table.

Marion glanced across the room and frowned slightly. Was it her imagination or had the banker's body turned slightly on its side? But that was impossible. Her taut nerves were playing tricks.

"No," Annie was continuing, "I think I can handle those men out there, tough as they are. I've done so before."

"Who are you, really?" hesitated Marion. "Are you Annie Smith or Princess Anne?"

"I don't know," sighed the girl. "I'm all mixed up. But this I do know. I love Hy Wharton and will die, if necessary, to keep his better self alive."

When the football player came back to them, looking sheepish and silly in his makeshift clothing, his sweetheart stood up, graceful as a panther, slipped one slim arm through his and led him toward the reception room.

"Well, good-by folks, whoever you are." The boy turned back after opening the door. "You've certainly done me a good turn today and I won't forget it. If you ever need—"

"Come on, dear." Annie pulled at his arm.

"I was just trying to say that Henry Wharton never—"

"NO!"

The guttural cry seemed to tear itself from the depths of hell.

Whirling, they beheld a frightful sight. The old body of Henry Wharton was writhing and twisting on its table as though endeavoring to lift a great weight. Its flabby muscles jerked and quivered. Its working lips drooled saliva. Even as they watched one shaking arm came up, groping—groping for the resonator diaphragm.

"No!" gargled the dreadful, muted voice. "No!"

Frank's reaction was automatic. He hurled himself at the door, pushed the astonished young couple into the reception room, slammed and bolted it behind them.

At the same moment Marion sprang for that upthrust arm.

She was too late. The resonator was jerked from its cord; hurled against the wall. As its tone broke short off, the banker rolled off the table and lurched to his feet. The hypnotic spell was broken.

"I heard," he snarled, gnarled claws working and yellow fangs biting his under lip. "Fools! So you thought you could betray Henry Wharton. Tonight you'll dine on castor oil for this. Tomorrow you'll be flayed in my presence."

He lunged toward the door but Frank barred the way. Realizing that he was no physical match for the young man, Wharton hesitated. Never had they seen such unadulterated evil as that which glared out of those features from which the last vestige of human decency had been erased.

His bloodshot eyes flickered about the room—came to rest on the annunciator. Before either of the scoundrels could move, he sprang toward it, extended a finger toward the button.

"Stop! Don't touch that bell, Henry!" The command rang through the room like a pistol shot.

It was Princess Anne. Haggard, disheveled, but fully awake, she crouched, like a cat on the table. Her hands were clasped on her bent knees. In them she held the automatic which Wharton had forgotten.

"What's the matter, you old fool?" rasped the banker. "These people have stolen our new bodies. Impostors are wearing them. I'm going to get them back."

"Impostors, Henry?" The words were almost a snigger.

"What the devil do you mean?"

"Don't call on the devil, Henry. He might come. And don't touch that button or I'll empty this automatic into your nasty old abdomen."

Wharton changed color. "Look here, your highness," he pleaded. "What's eating you? Don't you want a nice new body?"

"As much as you do, you old goat."

"Then let me push this button before they get away."

"You've pushed enough buttons and pulled enough wires, Henry Wharton." Her voice dripped acid. "For four hundred years I've stalked you. Always you've escaped because you had more money than I did. For four hundred years I've hated you with every atom

of my being. Now, because you broke that resonator, I've got you. There are just the two of us—man to woman."

"W-What?" He was shaking with pure terror.

"Remember that night at Prince Libenscu's reception, Henry?" She was becoming almost chatty and something of her old sparkle returned. "Remember what you said to me?"

"You're crazy as a loon, old woman."

"Maybe. But you're as good as dead, Henry. What was I saying? Oh, yes—that I'd stalked you for four centuries. Despite your money and your bodyguards, Henry, there were times when I could have killed you as I killed so many others to attain my ends. But I couldn't bring myself to do it. There was something about you that I . . . loved, too."

"Love!"

"Go ahead, sweet. It's true, just the

same. But the part I loved just walked out that door. Now I'm free."

Wharton must have sensed that death was approaching. As she talked he had bent forward, apparently forgetting the annunciator. Hands on knees, head bent, he seemed to be waiting for a signal.

Now, at her last word, he launched himself through the air at her in a pitiful but completely blood-chilling imitation of his old football line plunge.

The automatic spoke—spoke again.

Wharton seemed to fly apart. Arms and legs flailing, he struck the edge of the table, bounced to the floor and lay still.

"I hope, for your sakes, my dears," said the princess with a wry and yet, somehow, a proud smile, "that these walls are soundproof."

Then she placed the muzzle of the gun against her own temple.

Behind the eight ball? Too bad, pal,
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THE NOVA

It is unwise to shell a freighter loaded with TNT—and pirates of the future may make even worse mistakes—

By Edwin K. Sloat

Illustrated by Lipp

THE mutinous crew abandoned the *Andromeda* slightly more than three light-seconds off Callisto and less than two astro-degrees off the regular Ecliptic freight lane. Bourne and Arkett waited quite a while after the crew took to the man shells before they cautiously unlocked the steel hatch and peered out of the freight hold along the deserted passageway. There was nothing to be seen except the crumpled body of an oiler lying nearby with the head exploded to bits by a photon pistol blast.

"Hallo!" called Arkett.

"Hal-l-l-o-o—" answered the jumbled echoes from the depths of the big space freighter.

The old bos'n turned to Bourne. "Not a soul left aboard but us, son. I'll bet they even wrecked all the man shells they didn't need."

"The skipper's private shell should still be under the bridge," Bourne reminded him hopefully. "Most of the crew didn't know about it. I believe we've got something there."

"Got something there?" mimicked the bos'n. "What kind of talk is that? Sounds like something you read out of a book."

"It's a slang expression from the first half of the twentieth century, which makes it plenty ancient," replied Bourne.

Old Arkett snorted. "Books! That's all you young techs think about—books and labs—while the common herd, like myself, do all the work and come through

in the tight places. Just where do you think you'd be, son, if old Arkett hadn't smashed those two devils when the trouble broke, and dragged you into the freight hold?" That old book under your arm didn't help you in that spot."

"I'd probably be lying out there alongside that oiler with my head exploded to bits," admitted Bourne humbly.

They had come to the bridge now. One of the astrogators made a messy heap in the corner with his chest exploded to shreds by a photon blast. The skipper was dead in his quarters just aft. Bourne tried to keep from looking at the astrogator's body while he opened the secret compartment that housed the skipper's man shell.

Arkett squinted through the thick quartzite ports at the star-dusted vastness of the infinite void.

"They'll be back as fast as Kronk can fetch 'em," he rumbled. "It's as plain as the nose on your face. Kronk heard about the big ore shipment we took on at Titan and he took it for granted it was the semiannual platinum tax shipment to the Earth Council. So he smuggled his men aboard and staged this mutiny. But they never figured that you and I would get away from 'em into the hold and short the main power circuit. That's why they left so quick; they didn't know how many of us had survived and what we'd do next. It just looked a lot safer to take all the man shells and leave us stranded here



This, he decided, was no moment for prolonged explanations—

while they went for Kronk. He'll burn somebody plenty when he finds that our 'platinum' is only a couple of thousand tons of uranium worth about three dekka per ton on the open market."

Bourne's voice floated up out of the shell compartment. "Here's the skipper's shell, and it's provisioned, watered, and the power dials read up to snuff."

Bourne expected that "up to snuff" would get another rise out of the old bos'n, but instead Arkett swore with pleased delight.

"They forgot to put our heat guns out of commission," he explained. "Here's where Kronk gets the surprise of his life."

Bourne wasn't surprised. Heat for guns was generated chemically and projected on concentrated beams of reflected sunlight, a precaution adopted by all spaceships nearly a century ago so that they would still have armament in case the ship's power was shorted, as it was here.

"I've got a better idea," said Bourne crawling up out of the shell compartment. "We'll use the skipper's shell for a towboat—hook the electro-magnet anchor to the *Andromeda's* hull and drag her along. As soon as we get under way I can radio the nearest patrol for help."

"You can play towboat if you want to," rumbled Arkett in disgust. "I'm staying right here on the bridge and sticking with the guns."

"But you wouldn't have a chance!" protested Bourne. "There's only one back of pury heat guns to fight a pirate armament that would burn a full Interplanetary patrol to a cinder inside an hour. Besides, you'll have to be with me in the shell so that we can cut loose and make a run for it if we have to. After all, the *Andromeda* doesn't carry platinum; it's merely so much uranium synthetically produced and worth but a few dekka per ton."

"I'm staying right here," Arkett declared flatly. "Uranium or platinum, a true spaceman never deserts his ship. You techs aren't spacemen, anyway. Go on and play with your towboat if you want to, but if you were a spaceman at heart you'd let the shell stay where it is, use its televisor to call help, then help man these guns. This is the time for action, not bookish ideas."

Bourne stared at the old bos'n in dismay. Might as well try to pull Luna out of her orbit as to change Arkett's one-track mind. Yet if the old man was left up here alone, there'd be no chance to get him into the shell when Kronk's fleet showed up, for they'd turn this big freighter into a red-hot inferno inside five minutes when they opened up on it with their heat guns. And blast it they unquestionably would, for it was an invariable rule of Kronk never to board a victim ship without blasting it thoroughly first. It saved him the trouble of taking care of prisoners—and worrying about possible witnesses.

Bourne sighed and set out hopelessly to change Arkett's mind.

"Now listen," began Bourne. "There's a sizable little asteroid not far behind us. The astrogator noted it in his log here. See? If we can tow the *Andromeda* to it, we'll have a far better chance—"

He broke off as Arkett's grizzled head thrust itself forward tensely and his eyes squinted into the vast depths of the void. A faintly, barely moving cloud of tiny stars showed there against the powdery sparkle of unthinkably distant suns.

"By Tycho, they didn't waste any time," muttered the old bos'n, switching on the magnetic telescope, which, like the heat guns, operated independently of the ship's power circuit.

The screen of the 'scope brightened, and on it, magnified a thousand times, the cloud of tiny stars became Kronk's fleet of black, sinister spaceships. Kronk's own ship, *Death Dealer*, headed the flight. Bourne reached over Arkett's shoulder and twisted the focusing knob until the *Death Dealer* filled the screen.

"What kind of armament is that?" he asked of Arkett, pointing at the strange cannon, shaped like massive searchlights, that showed, two dozen strong on the sleek, tapered sides of the pirate ship.

Arkett sniffed contemptuously. "Old-fashioned cyclotron guns. Went out of style two hundred years ago. They fire neutrons through those center holes. Kronk must be hard run for chemicals when he replaces honest heat guns with those things. Or else he's found a way to use heavier neutrons."

"Cyclotrons?" echoed Bourne in a strained voice.

"Sure. Don't tell me that you never heard of those old contraptions! By Tycho, I never thought I'd live to see the day when a common bos'n could tell a bookish tech anything! What are you so pale about? They haven't a chance against a heat gun."

Bourne didn't hesitate. There wasn't time. By the time he tried to explain the situation to Arkett, it would be too late. So he stepped back, as the old man turned to look again at the scope screen, caught up a small metal calibration book from the astrogator's table, and brought it down on the grizzled, massive head.

Bourne caught the old man as he slumped unconscious, and dragged him frantically across the bridge to the shell compartment.

"Hated to do it, old-timer," muttered Bourne through clenched teeth. "But it was the only way you'd ever appreciate what a book contains. Even this way we may be too late."

He opened the entrance port of the man shell, and hoisted Arkett's body inside, then climbed in himself and locked the port after him. His frenzied fingers found the radio-control switch that operated the air lock by remote control.

The lock opened, and the outward rush of air carried the man shell along its roller-bearing cradle out into empty space. Bourne jerked open the anti-gravity propulsion throttle to the first safety notch, and in addition set off the emergency rockets with which the shell was equipped.

The wild forward surge of the little craft pinned him back against the seat and robbed his brain of its flow of life-giving blood until he nearly went unconscious. Even the stout welded braces and the sturdy hull of the little shell groaned and vibrated under the terrific acceleration.

Bourne fought to keep his senses. Somewhere ahead was the asteroid the dead astrogator had noted in his log, a lifeless, frozen space island swinging on its eternal orbit about the mother Sun. If only he could reach it, before Kruuk set off his opening cyclotron blast. Bourne did not let himself think what might happen if the asteroid was

too small to serve for a shield.

—There it was now, a lopsided ball ten or more miles in diameter with savage rocky outlines savagely gleaming in the sunlight. Bourne threw the anti-gravity propulsion into reverse, and added to it the backthrust of the emergency rockets in the shell's nose. His body lurched itself violently against the control board in front of him, and he fought grimly to prevent the crimson tide from washing up and completely submerging his brain and mind. He had to! There was old Arkett to think of—God grant that the blow on his head and this mad flight had not already caused his death!

The flaming, groaning man shell rounded the serrated horizon of the tiny world somehow—like a wildly-driven automobile skidding round a corner on shrieking, locked tires—and stopped about midway between the horizons.

Just before he lost consciousness, Bourne managed to release the electromagnet anchor and let it go floating out to the surface of the frozen tiny planet, to grip the iron content of its make-up, a factor usually existing in these asteroids.

"WHAT, THE HELL did you hit me for?" growled Arkett, sitting up dizzily a little later and fingering tenderly the egg-sized bump on the back of his head. Bourne pointed at the horizon of the asteroid through the ports. The savage rocks were sucking down in blinding glory.

"Just a case of a worthless young tech trying to get a little ancient information through your stubborn head."

"What information?"

"About cyclotron guns and uranium. You evidently didn't see the connection. About the time that 'You've got something there' was a popular slang expression, scientists were beginning to do things with the atom. A couple of experimenters in Teutonia, which back in

those days was known as Germany, found that they could spin ionized hydrogen atoms between the magnets of a cyclotron—changing potentials about fifteen million times a second—and shoot the atoms against a lithium target which in turn hurled neutrons at uranium dust on a second target. When a neutron struck a uranium atom and split it, about two hundred million electron volts were released.

"It was the first time any big amount of atomic energy was freed. The most anybody had been able to produce up to that time was but a paltry five electron volts which was freed through the explosion of TNT, the most powerful explosive of the ancients at that time, and considered a very powerful weapon. You see I was reading all about it in the 'Ancient Outline of Science, Years 1935-1940.'

"So as soon as I discovered that Krunk's *Death Dealer* was fitted with cyclotron guns that probably shoot neutrons as much heavier than those used by the ancients in that first successful atomic energy release, as cannon balls are heavier than thistledown, I knew there were going to be some real fireworks when they opened up on our two thousand tons of uranium in the *Andromeda's* hold.

"Lucky for us this asteroid was near and we could get behind it in time. Its

melting pretty badly, even though we're several thousand miles from the explosion, but it must be dying out already. Krunk, however, was quite close, and he had no protection at all. I'll bet you they don't even find cinders of his fleet."

Arkett unconsciously scratched his head and winced from the pain. Then he said respectfully, "I believe you've got something there, young man. Say, what do you suppose they think about it back on Earth?"

Hourne's answer was to switch on the television's New York wave length. An excited announcer appeared on the screen.

"—this small nova burst into violent life in the neighborhood of Jupiter less than twenty minutes ago," he was saying hurriedly. "Its origin is a mystery. Astronomers say it will be short-lived, probably, for its intensity—its brilliance rivals the noonday sun as most of you have already noted—is already lessening. First incomplete reports from Callisto and Titan say that hundreds of people caught without shelter have been killed by the heat, thousands of square miles of forests and cultivated fields have been burned to a crisp, and whole villages destroyed by fire. Interplanetary Television is keeping in constant touch with the nova and will flash to you additional news and views as soon as they are received."

"I TALKED WITH GOD"

(yes, I did—actually and literally)

and, as a result of that little talk with God some ten years ago, a strange new Power came into my life. After 43 years of horrible, torturing, dismal failure, this strange Power brought to me a wave of overwhelming victory, and I have been overcoming every undesirable condition of my life ever since. What a change it was. Now—I have credit at more than one bank, I own a beautiful home, drive a lovely car, own a newspaper and a large office building, and my wife and family are amply provided for after I leave for obscure unknown. In addition to these material blessings, I have a sweet peace in my life. I am happy as happy can be. No circumstances ever sports me, for I have learned how to draw upon the invisible God-Law, under any and all circumstances.

You too may find and use the same staggering Power of the God-Law that I use. It can bring you too, whatever things are right and proper for you to have. Do you believe this? It won't cost much to find out—just a penny postcard or a letter, addressed to Dr. Frank B. Robinson, Dept. 7, Monroe, Idaho, will bring you the story of the most fantastic success of the century. And the same Power I use here for your use too. I'll be glad to tell you about it. All information about this experience will be sent you free, of course. The address again—Dr. Frank B. Robinson, Dept. 7, Monroe, Idaho. Advt. Copyright 1929 Frank B. Robinson.

IN TIMES TO COME



Next month, of course, finishes "Gray Lensman"—the sort of thing I always feel is unfortunate, yet eagerly awaited, leaving me, consequently, with somewhat confused ideas. Funny, but the better you like a yarn, the more anxious you are to reach the end—

Harl Vincent takes the lead in next month's issue, with "Neutral Vessel"—and a cover for it done by Schneeman looks very good.

D. L. James—one of our once-in-a-long-while regulars—returns with "Moon of Delirium," and an interesting idea. Lester del Rey is back also, with a novelette about a rubber doll. Peculiar subject for science-fiction? Ah, but the scientist turned it into a paperweight by dumping the mess resulting from a sour experiment into it. And, to misquote the song, the doll got up and slowly walked away—

It's called "The Smallest God," and bears out the old contention that even the smallest piece of dynamite can stir things up.

THE EDITOR.

ANALYTICAL LABORATORY



The unanimity with which you picked first place this month was not startling; it was expected. Dr. Smith's "Gray Lensman" won by a lightyear. But, disconcertingly, there is what amounts to a three-way tie immediately thereafter, with such slight differences as to make any ranking in order rather unjust and misleading. Let's put it this way:

1. Gray Lensman

Dr. F. E. Smith

2. Tied:

Episode on Dhee Minor
A Question of Salvage
Space Rating

Harry Walton
Malcolm Jameson
John Perryman

3. Rust

Joseph Kefleam

4. Shawn's Sword

Lee Gregor

And Rogers' cover received an unusual amount of favorable comment. Since this issue as a whole was rather generally voted best of the year, places in the above ratings were hotly contested.

THE EDITOR.

"THERE AIN'T NO SUCH!"

Continuing the proof that Nature makes a sucker out of any man who thinks he's got imaginations when it comes to screwy beetles—

By L. Sprague de Camp

Illustrated by E. E. Hatcher

Part II.

We ended the first installment of this article with a discussion of some of the more bizarre ways in which animals catch their food. The next question is, logically, how is the food eaten?

Having caught its prey, an animal may swallow it whole, or hold it down while it bites off pieces. The praying-mantises do the latter with their grasping forelegs. The pipistrelle or flitter-mouse, a common European bat, has a neat trick: Its wing-membranes join its legs, which in turn are joined to its tail by membranes, making a kind of apron (Fig. 1). When a pipistrelle catches a large beetle or other insect too big to bolt at one gulp, it brings its legs forward and up, making a perfect feed-bag out of its apron. It buries its head in this lunch basket and munches its prey, while nonchalantly continuing its flight!

The enormous mouth of the female angler (Fig. 4) may puzzle some, since this fish preys upon fish much smaller than herself. The reason for the mouth is simple. The angler is obviously not built to chase agile prey, or even to pounce. Instead, she lures her victims close with her little fishing rod—and the sudden opening of the vast mouth causes them to be sucked in by the inrush of water!

The way of an octopus with a crab was a subject of some mystery until a

decade or so back, when an aquarium octopus obligingly demonstrated its methods against the glass of its tank. Having pounced on the crab and flattened its circle of tentacles down on it, the octopus breaks open the crab's shell with its parrotlike beak and expels its gastric juices through its mouth. The crab's parts are digested, and the octopus sucks up the resulting soup. The octopus can thus be said to have the singular if unattractive distinction of digesting its food before swallowing it.

The smaller blood-drinking animals have the problem of keeping their food from coagulating; rather as if your soup were likely to turn to concrete at any moment. Some of them get around this difficulty in ingenious ways: The leeches secrete an anticoagulant, hirudin, with their saliva. The saliva of vampire bats is thought to work the same way. Vampires, of course, do not suck blood; they dig the skin open with a pair of razor-sharp incisor teeth and lap it up.

Among the more unusual chewing-mechanisms may be mentioned that of the horseshoe crab *Limulus*, in which the "teeth" are spines on the first joints of the legs; thus the animal chews when it walks and walks when it chews. *Limulus* may be described as the original dinner-dancer. A lobster gives his food a preliminary chewing with his



Fig. 1. Table-manners: The *pipistrelle* or *flutter-mouse* uses the membrane connecting his wings, legs, and tail as a lunch basket when he catches an insect too large to be swallowed at one gulp. But he doesn't stop flying while finishing his meal!

chewing-legs; after his food has been swallowed it is really given the works by another grinding-mechanism in his stomach. And just to make the story complete, there are the many insects in which the adult form does not eat at all; after leaving its chrysalis it lives only long enough to breed.

Methods of digestion are equally varied: With some of the simpler animals—you note that I try to avoid saying "higher" and "lower," which might imply an undue prejudice in favor of my own species—certain amoeboid cells, resembling the leucocytes of a human being, engulf bits of food and then crawl through the animal to deliver their burdens to the parts that need feeding. The sponges do this. But in the more complex forms, the cells comprising the digestive machinery stay put. The difference is like that between a machine shop in which each piece of work has to be carried around by hand, and one in which a conveyor-belt system takes care of moving the work, leaving the workers free to concentrate on the actual fabrication processes.

The *hydra*—minute fresh-water

flowerlike animals—represent a half-way stage: the food is partly digested before being picked up and carried away by the amoeboid cells. *Hydras*, by the way, are so poorly co-ordinated that their table manners are terrible. A *hydra* is quite apt to swallow its own base or tentacles by mistake. No harm is done, as the swallowed parts are immediately released.

Most animals do not secrete the enzymes that would enable them to break cellulose down into soluble sugars, and hence they cannot digest wood. The termites overcome the chemical stability of cellulose by letting somebody else do their digesting for them. In their viscera lives a certain flagellate protozoan, *Trichonympha*, digests their saw-dust food. *Trichonympha* has its own peculiarities. The amorphous protozoans, like the amoeba, feed by flowing around and engulfing their food; the more complex ones, like *Paramecium*, have a definite mouth. *Trichonympha* is a very complex protozoan with lots of cilia, but its front end is amoeboid and it eats by the flowing-around method.

The astonishingly high concentration of vitamins in the tissues of certain large fish—hence cod-liver oil—has been traced to the fact that, when these fish eat little fish, the vitamins of the little fish are not broken down in the digestive process. Instead, the big fish save them and add them to their own stores, just like big bankers and little bankers. But an even odder case of discriminating digestion is shown by the planarian worm *Macrostomum* and certain gastropod mollusks. These animals were found to be protected by stinging cells in their skins. Now for a planarian to have stinging cells is remarkable enough, but for a sea snail to have them is sheerly impossible. Eventually it was found that when these organisms eat hydroids—small fixed relatives of the jellyfishes—their digestive mechanisms

sort out the stinging cells of their prey; these cells are carried to the skins of the larger animals, and lodged there, ready to be discharged at the first enemy.

We find all sorts of variations in the ratio of the size of the eaters and the eaten: from the baleen whales and the biggest fish, the basking shark and whale shark, which live on marine crustaceans not much bigger than pin-heads, to the black swallower, an ordinary-looking deep-sea fish that has been known to swallow another fish three times its own size. The internal mustache that the baleen whales use to strain their copepod food out of the water is well known. Not so well known is the system used by the two great sharks, which consists of strainers inside the gills. All they have to do is swim

around with their mouths open. Water and copepods go in the mouth; water goes out the gill-slits, and copepods go to that undiscovered country from whose bourne no traveler returns.

If we don't insist that the eater swallow the eaten, we can, of course, get a much greater disparity between their sizes in the latter's favor by including small parasites on large hosts. Here we might remark that there are not only upside-down and hind-side-before animals, but inside-out animals as well: the tapeworms, for instance. Not needing to digest their food—their host having kindly taken care of that—they absorb it through their skins, and can be thought of as having their stomachs all over their outsides.

Some animals show much odder tastes

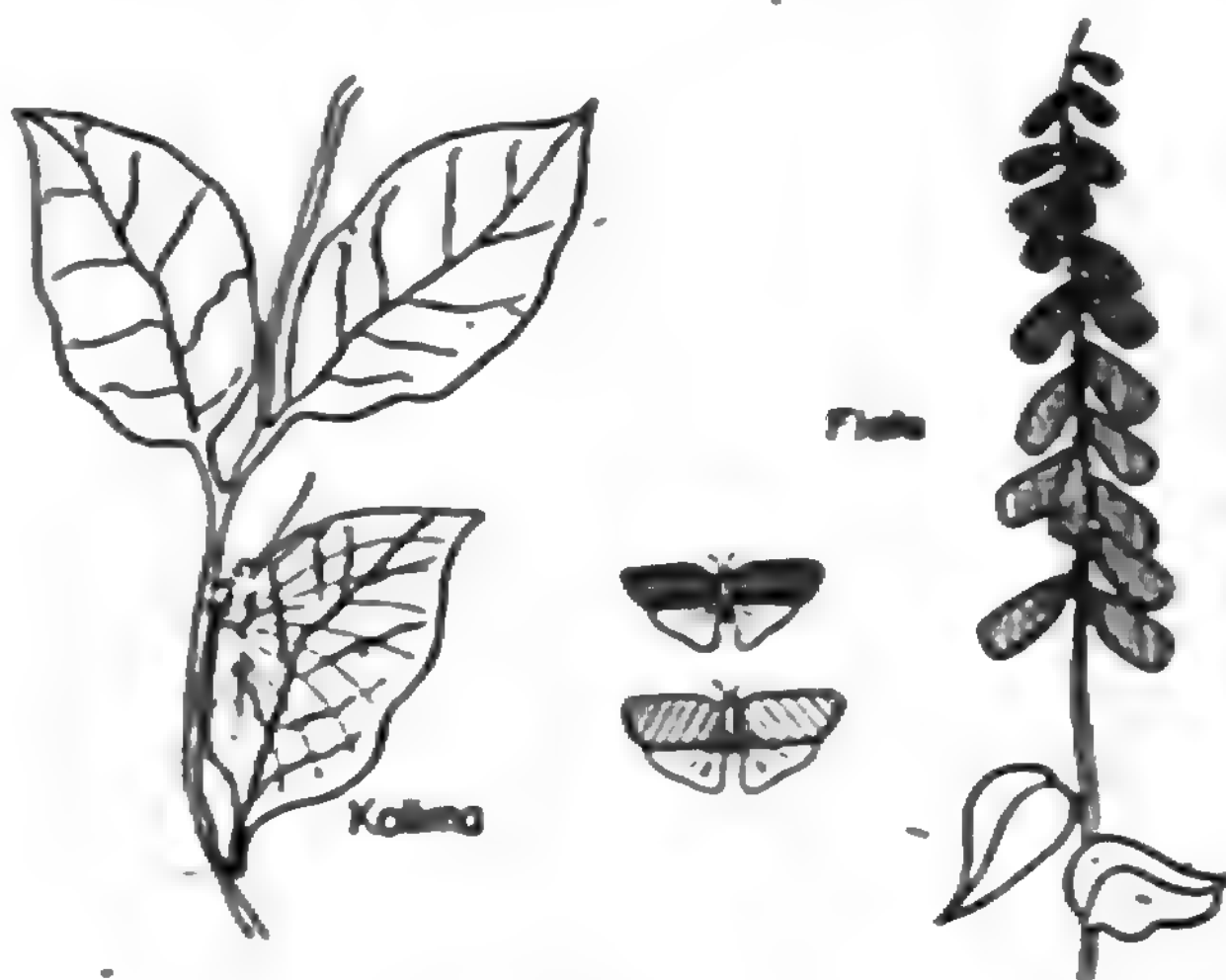


Fig. 2. Camouflage: At left, the Sumatran dead-leaf butterfly *Kallima*; at right, the African bug *Flata*. *Kallima* looks quite as leaflike as is shown in the drawing, and of course she has instinct enough to stand on the twig with her head pointing in the same direction as the true leaves. *Flata* occurs in two forms, a small green and a large red one, shown in the center. When lighting on a vertical twig, the green *Flatas* cluster at the upper end and the red at the lower, carrying out the illusion of a broodlike flower with the upper blossoms not yet open.

in food than the termites: the dung-beetles, for instances, or the sea otter, which eats sea urchins, which nothing else will touch. (A friend of mine once tried a sea urchin; he said it tasted mainly like Pacific Ocean.) The sea otter, by the bye, was once thought to have been exterminated by hide hunters, but in recent years a herd of several hundred has been found living near Monterey, California. With rigorous protection it may come back. It shows an interesting transition between the one-quarter aquatic land otter and the three-quarters aquatic sea lion, its hindfeet having become flippers while its forelegs still end in paws.

But for really strange food, I invite your attention to the grubs of certain beetles, which can not only live, but thrive, on diets of tobacco, pepper, opium, or aconite. Several generations of beetles reared on these uninviting foods showed no signs of ill effects. One wonders just how one would go about poisoning creatures with such invincible digestions. Maybe it would be simpler to put them on something hard and hit them with a mallet.

THE topic of food brings up the question of what animals do when they haven't any. Horned lizards imprisoned in cornerstones undoubtedly die a speedy death, like any other reptiles under the circumstances. But some spiders can and do go without food for years while waiting for a victim. Many animals store food and fuel in the form of deposits of fat; examples are the camel's hump and the gila-monster's tail. It may surprise some to learn that a very similar example of localized storage is found in *Homo sapiens*, in the form of a huge development of the buttocks known as *steatopygia*. It is found among the Bushmen and Hottentots of South Africa, mainly in the women. There is also reason for suspecting that the women of the Cro-Magnon race, who

overran Europe in the Postglacial Period, were *steatopagous*. Writers who for years have been describing these people as a race of Greek gods and goddesses might be pained to learn that a well-fed Cro-Magnon woman had a natural bustle of fat on which you could balance a chessboard.

When an animal is starved, it first burns up any surplus fat it may have stored, and then consumes itself, beginning with the least vital tissues. In the planaria, this process is so well balanced that the whole worm shrinks, while apparently retaining its original shape and appearance. A planaria starved for six months shrank in length from 20 to 6 millimeters, but was otherwise not apparently harmed. The planaria, by the way, have a head, but its mouth isn't in the head where one expects mouths to be. It's in the middle of the back.

For desert animals, the water-storage problem is as serious as that of storing food. The sponge-like water compartments in a camel's stomach are one answer. A frog that lives in the Australian deserts, *Chiropletes*, has a one-way skin through which it soaks water when it gets the chance. But it doesn't know when to stop. Take one of these frogs that has been without water for a long time; it is thin and dry-skinned, like a little animated mummy. Put it in a pan of water; in a little while your frog looks like a very dirty and somewhat knobby tennis ball from the water it has absorbed.

An animal needs not only means of feeding, which usually implies moving, but also means of self-protection. Among our own animal acquaintances we are familiar with fangs and claws, horns and hoofs, shells and stings, spines and plates, keenness of sense, swiftness of flight; and stealth of concealment. Among the more unusual active means of defense is the operculum of the active gastropod *Strombus*. The operculum is

the little door with which most gastropods block the entrance to their shells when they retire within. *Strombus* scorns such an expedient; its operculum is developed into a saw-toothed claw with which it slashes with most unscail-like vigor at any hand that picks it up. Among those ants that use formic acid, some inject it through their jaws—a tiny copper-colored Florida ant has an astonishingly painful bite of this sort—some use a posterior sting, like their relatives the bees and wasps; some, just to be dirty, can do both.

Squirt-guns are found not only in the skunk and the spitting cobra, but in the termite *Constrictotermes*. This insect has a squitter in its head, with which it sprays enemies with a sticky, entangling liquid. The bombardier beetles discharge a cloud of noxious gas with an audible explosion. I have also been told about a small West African wasp that, instead of stinging, deposits a drop of formic acid on your skin without your knowing it and then flies away, leaving the acid to eat a hole in you. You react quickly enough once this process starts.

Perhaps the most sophisticated means of defense is that of the electric fishes. The full tale of how their modified muscle-cells are made to act as condensers is not entirely known yet. It is known, though, that the electric eel gets his 600 volts by connecting his cells in parallel when charging, and connecting them in series when discharging. Throwing several million switches would seem like something of a job, but the eel does it in 1/300 of a second. He has three sets of cells. The two larger ones are used for stunning and killing his prey. The third set, near the end of the tail, are smaller and discharge more or less continuously when the fish is swimming; they thereby serve as a warning to other large organisms to stand clear and not to try any experimental bites.

PROTECTIVE coloration is an old story, and most of us know about stick-insects and leaf-insects. The accompanying picture of *Kallima*, the Sumatran dead-leaf butterfly, is included just to show what can be done (Fig. 2). But there are some insects that do better yet. The East African hemipterid bug *Flata nigrolineata* is dimorphic; that is, it occurs in two different forms, like the black and cinnamon phases of the American black bear, only more so. One form of this butterflylike insect is small and green, and the other is larger and red.

A swarm of *Flatas* will light on a vertical stem or twig, the green ones at the top and the red below. The result looks just like a kind of foxglove or fireweed flower, the green bugs corresponding to the unripe blossoms! The late Dr. J. W. Gregory once tried to pick such a flower, whereupon the blossoms flew off in all directions. Individuals of the orange Asiatic butterfly *Callidryas scylla* place themselves in a double circle, making a very handsome flower indeed. Then, five specimens of the white butterfly *Pieris* may form a ring around the orange butterflies to complete the design. How these insects ever came to co-operate this way is something that hasn't been plausibly explained.

Some organisms try to frighten potential enemies, as the flies that look like bees and wasps, or the harmless hognosed snake that swells himself up, widens his head, hisses, and strikes in a most convincing manner. (He will never actually strike your hands; he just lunges all around it.) If that doesn't work, the hognose plays dead, going through convulsions and finally turning over on his back. But a snake has a single-track mind if any; turn the hognose over on his stomach, and he immediately flops over on his back again. The puss-moth caterpillar has its rear

end made up to resemble a snake's head, including a pair of imitation eyes; it not only raises this phony head and waves it about threateningly, but shoots out a pair of filaments looking like a snake's forked tongue.

Another way to escape an enemy is to divert his attention; this is practiced, for instance, by the many lizards who shed their tails and leave them flopping while the lizards scuttle away. Diversion is carried to an extreme by the sea cucumbers, who when attacked vomit out their whole works—feathery tentacles, viscera, and all—leaving nothing but a bag of skin. The enemy is supposed to go for the briefly moving bunch of organs, leaving the bag to grow a whole new set during subsequent weeks.

A somewhat elaborate form of diversion is practiced by some squids. Such a squid, when squirting himself along for dear life with a fish or sea lion after him, makes his skin dark. Then he suddenly makes a right-angled turn and rockets off in the new direction, simultaneously turning pale-colored and shooting out a small cloud of ink, which goes wafting off in the opposite direction (Fig. 3). The enemy, who has been chasing a dark object, naturally goes after the ink. Some deep-sea squids vary the procedure by expelling a cloud of luminous fluid for their foes to snap at.

It is not enough for an animal merely to maintain itself; it has to reproduce its kind for the species to continue. Between the clearly bisexual mammals and the sexless amoeba there are all sorts of gradations and variants. There are the neuter workers—really sterile females—of the ants, bees, and termites. There are many hermaphroditic animals, which may fertilize themselves—tapeworms—or which may practice cross-fertilization by each one of a pair—snails. There are animals that change from male to female and back again in regular rhythm—oysters. There are animals that practice parthenogenesis, that is to say virgin births. Aphids—plant lice—do this

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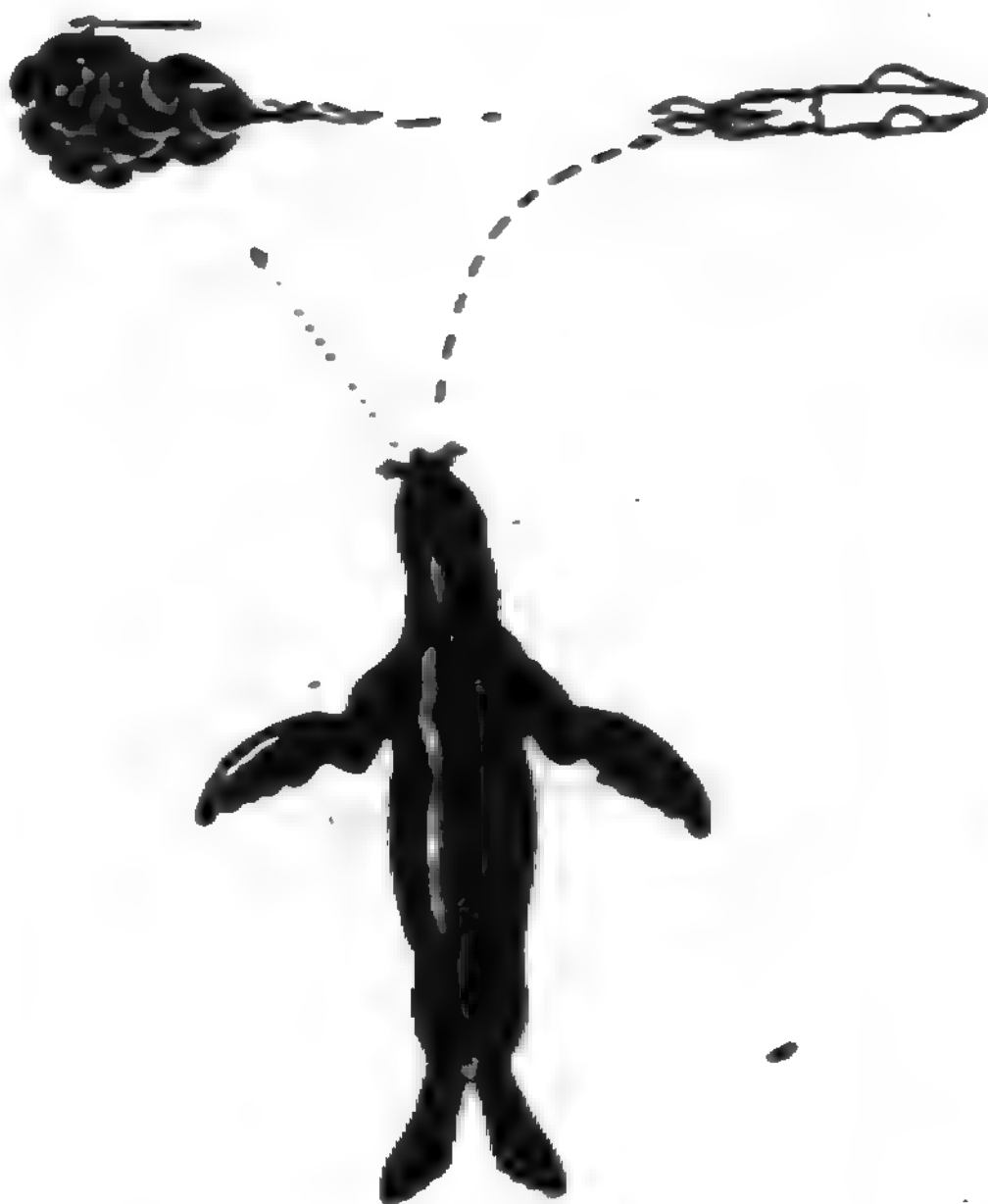


Fig. 3. Diversion: To escape the pursuing sea-lion, the squid changes his color from light to dark, makes a sharp turn (as shown by the broken line) and shoots out a cloud of ink, which drifts in the direction shown by the solid arrow. The sea-lion, who has been chasing a dark object, has his attention distracted in the direction shown by the dotted line. By the time he has discovered his mistake, the squid will have made good his escape (he hopes).

over many generations, only occasionally producing a generation with males in it. The sargassum fish *Pterophryne* has been suspected of this; at least, nobody has ever identified a male *Pterophryne*. In the floating rotifer *Applancha*—a microscopic multicelled animal—an unborn embryo may become pregnant.

Even among the clearly bisexual animals, the relations between the sexes are often peculiar, to say the least. Our own species, while deserving of attention in this respect, is outside the scope of this article—a favorite phrase with writers when confronted by a subject hotter than they care to handle.

The male of the predatory fly *Hilaria* presents his love with a bouquet consisting of a flower-petal or a piece of grass-stem; she turns this over and over in her forelegs during the subsequent events. Touching. The male of the small crustacean *Gammarus* carries his mate, who is only half his size, in his forelegs, presumably as a precaution

against losing her. On the other hand the female deep-sea angler is an obese monster a yard or more long, while the male is a little thing about the size of your thumbnail. This is one of the few animals in which many times as many males are born as females. When a male finds a female, he attaches himself to her by his sucker-mouth, chews a hole in her skin, and becomes a shapeless parasite (Fig. 4). Even his blood stream unites with hers. In the fluke *Diplozoon*, a parasite on the gills of fish, the male and female are permanently fused together in the form of a letter X. Question: Have we a pair of worms or a single hermaphrodite? Because of the peculiar relations between the sexes in the sea horse, people for years thought—with good reason—that the male sea horses were females, and vice versa.

In many species of spider, and mantis, the female eats the male after mating. But the male of the king rag-

worm *Nereis candata* eats the female when she has laid her eggs in their common burrow, and takes over the task of keeping a current of water flowing over the eggs. With the Bermuda fireworm, breeding involves mass suicide. The worms swarm up to the surface by thousands and literally burst into fragments, leaving their eggs to carry on as best they can.

The female of the large Madagascan water bug *Hydrocyrius* lays her eggs all over the male's back, gluing his wings down firmly until the eggs hatch. The male surinam toad puts the eggs into pits in the female's back, where they hatch and develop into toads. The first biologist who saw the little toads pushing up the lids of their compartments and swarming out doubted his own sanity for a while.

THE flying frog of Java *Polypedates leucorhina* lays its eggs in a mass of foam that it secretes in a tree; this mass gradually changes into a sort of

water-filled goldfish bowl—or, to be literal, a pollywog bowl—in which the young develop. As you might expect, this frog doesn't fly; it merely glides on its greatly enlarged webbed feet, much like the flying snake and the dragon, which however use spread membrane-connected ribs. (I'm talking about real, modern animals.)

The female of the South American human bot fly *Dermatobia hominis* uses an extraordinary expedient to get her young planted on their host without getting herself slapped in the process. She catches a mosquito, newly hatched from its pupa, and hence weak, and lays her eggs on its body and legs, being careful neither to harm the mosquito nor to lay eggs where they would interfere with its movements. She releases the mosquito, who is no doubt very glad to get away.

When the mosquito bites a man, the eggs hatch instantly from the warmth of the man's skin, into which the maggots bore. As a maggot grows, it



Fig. 4. Sexual dimorphism: Difference in the body-form of the two sexes above and beyond what is required by their rôles in the reproductive process. In the Steller's sea-lion, left, the bull is several times the size of the cows in his harem. A big bull may reach a length of twelve feet. In the deep-sea angler-fishes, right, the female may be three or four feet long and the male only half an inch, with a weight-ratio of hundreds of thousands to one. The female is shown surrounded by males, one of which will attach himself to her skin and spend the rest of his life as a parasite.

bores into the muscle, backing up to the opening of its burrow now and then to breathe. The sensation of having a maggot crawling up and down its little tunnel is said to be like nothing else on earth, and far from pleasant. The maggot can easily be killed by iodine or squeezing, but this is likely to result in a dangerous infection. The right way to dispose of it is to smear beeswax or chewing gum over the entrance to the burrow, which looks rather like a mosquito bite. Next time the maggot comes up to breathe, it thrusts its breathing tubes into the sticky mass that keeps it from the air. The wax or gum can then be peeled off, usually bringing the maggot with it.

The cephalopods have been popping into this article so frequently that we ought not be surprised to hear that they deserve mention for their methods of caring for their young. The female octopus lays her eggs in a crevice in the rocks and stands guard over them. When the little octopodes—I prefer this unauthorized plural to the dictionary's "octopi" and "octopuses," as being philologically more justified than the former and more euphonious than the latter, which makes you sound like a leaky valve—hatch, they are about the

size of pinheads. Mama blows them out of the crevice into the world by squirting a stream of water on them from her siphon.

The female argonaut, who otherwise resembles a small octopus, has two of her arms formed into lobes by broad membranes. With these she secretes and carries around with her a beautiful and delicate spiral shell, which serves as an egg container. But, as the shell is not permanently connected with its owner, the argonaut can, if she feels like it, park the shell in a safe place while she goes foraging. And Man thinks he invented the baby carriage to park Bobby in while mamma is shopping!

Altogether, to prove our point, it should not have been necessary to cite so many oddities: the squid and the octopus between them exhibit enough peculiarities for a whole zoo of freaks. Consider their methods of locomotion, of catching and eating prey, and of starting their young on their careers; their scrambled anatomy, with its parrot beak and lingual ribbon; and their ability to change color and squirt ink. But I think you'll agree on the soundness of this advice: If you want screwy animals, SEE YOUR OWN PLANET FIRST!

THE END.

NO EXTRA COST FOR VITAMINA

(CAROTENE)

**SMITH BROS.
COUGH DROPS**

(BLACK OR MENTHOL-56)





BRASS TACKS

I'd like votes on the current science article.

Dear Mr. Campbell:

Here is my list of preferences of the July issue for consideration in the "Analytical Laboratory":

1. "Greater than Gods," C. L. Moore (beautiful!)
 2. "City of the Cellular Rays," Nat Schoonman (more)
 3. "Lightship, No. 1," Nelson S. Bond
 4. "When the Mail Goes Co.," Amelia R. Long (logical)
 5. "Black Destroyer," A. E. Van Vogt
 6. "The Math," Ross Rocklynne
 7. "Treads," Isaac Asimov (monotonous story)
- "Tools for Builders" (Vernon) and "Geography for Time Travelers" (Ley) were extremely interesting and educational. Let's have more. These two could be included between 2 and 3 in the top listing. If you would care to know my opinion, I particularly liked Orban's jacket for A. E. Long's story—almost resembles an eskimo or wood cut. Excellent issue!—Wilbur J. Wilmer, 679 Park Avenue, West New York, N. J.

—And even "Double-talk under double-moons?"

Dear Mr. Campbell:

If you could have been at the Thursday meeting of the Los Angeles Science-Fiction League you would have heard a chorus of excited oh's and ah's echo far into the night as Forrest J. Ackerman produced the October issue of *Asimov*. It is, undoubtedly, the best cover of the year. The only other covers anywhere near as good, of course, are the other two by Rogers and the astronomical accomplishment of some months past. And, as far as we are concerned in L. A., you can have Rogers do every cover from now on. Not only can the man draw machinery and ships, but when it comes to painting in "our here," he outdoes himself. Kimball Klackson, as covered, is enough to make Atlas melt away into his original ninety-seven pounds.

And another point—it has been said, and said often, that editors of pulp magazines will use any color on the cover of their magazine

as long as it is red. *Asimov* has defied this seemingly iron-clad law by using blue, and using it well. Personally, I think an intelligently composed picture, as was the October cover—using that extremely handsome shade of blue—can draw more people, at least the more conservative type, to take a squint at the contents.

At the newsstand yesterday I was pleased to hear a gray-haired man remark, "How isn't that a nice bit of cover." He was referring to our friend "Oray Lashman," of course. I asked him if he read science-fiction. His reply was no. But the fact still stands that *Asimov* had the best cover on any pulp mag for the month of October—and that the splendid use of anatomy and color by the best artist on your staff was enough to draw attention from people who read nothing but slicks. And that's a fitting crown for the seven-year-old *Asimov* baby who started out in special diapers and worked itself up into an intelligent maturity of being dated more often by science-fictioners than any other mag. (And using blue lipstick, too!)

Exceedingly pleased, also, are we Los Angeles Fanshewers with Skylark Smith's return. "Oray Lashman" promises to be his greatest. God, but can the man turn around the words. Instead of seeing pink elephants—if and when I ever take to drink—I shall probably see super-cosmic-relativistic-gravitational disrupting my fellow terrestrials!

The illustrations by Schoonman are exceedingly good. John Berryman's "Space Rating" rates five meteors with me. Jamison's "A Question of Salvage" rates four. "Episode on Deep Minor" rates three. Lee Greger puts us in a position to sling four meteors up on the heavens for his "Shawn's Sword."

Both articles were worth five meteors. Willy Ley remains the favorite of all article writers. Imagine what a prodigious Kate Smith would have with two moons—she's having a hard time getting our one lunar world over her mountain. Love songs, I imagine, if ever a second moon is found, would go something like this: "We fell in love under the east and west moons," or "Double-crossed love under double moons." Plenty of room for expansion on Tin-pan Alley there. 'Twould be a heck of a thing if our one moon ever vanished. Macchia would be outa work.

And I almost forgot "Rust." It deserves four meteors, just because it is a nice little

year—nothing sensational—but very, very good reading.

Illustrations inside:

Schoonman: Four motors.

Wesson: Three and a half motors.

Orban: Should be in The Shadow.

Kramer: One Breacher.

Consensus of Opinion: Every story good. Another milestone in the ultimate perfecting of our mag.—Ray Douglas Bradbury, Editor Futuristic Postcard, Los Angeles R. F. L., 1941 20, Manhattan Pl., Los Angeles, Calif.

More Rogers coming up.

Dear Mr. Campbell:

I was rather shocked when I read Mr. Damon Knight's letter in Brain Tacks. I hope you do not take his suggestion and stop Rogers from painting space-ships. Rogers' space-ships are the best, the most probable, and the most practical space-ships that I have seen on any science-fiction cover or illustration. Not only his space-ships, but the background and the color are exceptionally good. Every time I see a cover by Rogers I feel like tearing it off and framing it, regardless whether there is typing across it or not. In my opinion, Rogers is the best artist in the science-fiction field. I'll never get tired of his work, even if he does the cover every month.—Fred Hunter, Red Rock, Niagara F. O., Ont., Can.

Rogers may join the black and white artists.

Dear Mr. Campbell:

The September issue of Astounding was, in general, superior to the August; the stories were better written and had more interest and significance. The types of stories are the kinds I hope to see appearing, although the stories themselves are perhaps not the highest examples of their types; however, it's a step in the right direction.

But to be more specific, and to get down to the stories themselves—

"Force Must Balance," by Wellman: An action story showing commendable restraint in dishing out high adventure. The characterization was good, the characters were real. The idea of the various governments agreeing to abide by the result of a race was a bit naive, but well treated, and necessary, I guess, to the plot. The background space-ship handling, machinery, and so forth—was well handled. Diction and style were suitable and satisfactory, if a bit expounded in spots. The reader's interest and attention were held throughout; the final impression was pleasing. All in all, then, Wellman has presented a good story, well told; and it deserves first place.

"The Last Hope" had little of originality, and failed to interest me to any great degree. The plot, the situation, the characters, were not presented very forcibly or vividly, although Johnny wasn't bad. I have read what amounted to the same story several times in the past; and once or twice it was better done. Evans will, I believe, improve with experience. Give it fourth place.

"Atmospherics" lies for second—or third—with "Mason's Secret." Most of what I said for "Force Must Balance" applies to this story, and in some ways it was superior to the former—slightly better written, I think. It was evident that thought and care had been spent on it; the system—atmospherics, take-care, et al—was well worked out.

I'm glad to see Galois back again—and I'm glad to read his yarn. The only fault I have to pick in the story is what seems to me an implausibility—the militarists going out of business because of the establishment of Fanchaw as hero-extrordinary. But that's a matter of opinion, and not too important.

"Elber Breacher" was spoiled for me by the

treatment of them—whatever they were—that were mousing up the color television. It didn't go over with me; and since the plot depended on it, the story fell rather flat. It was another story in which plausibility was sacrificed to humor. However, I realize that one humorous story per issue makes for relief and variety; and I'm for it—if the story doesn't make that particular sacrifice.

Engelhart evidently spent some time and thought on "General Swamp, C. I. C.," and as a result produced the best story in two issues. I dislike to rate serials against shorts and novellas, so this isn't included in my rating. The story was well treated and developed; the narrative was good. Those military tactics and maneuvers, together with the local color and background, formed an excellent and convincing setting for the plot—a plot which, though first appearing in history books, never fails to interest—when treated well.

And now may I jump into the miasma that surrounds the harassed artists? Schoonman, Wesson, Orban, Kell, Rogers, Finlay, and perhaps one or two more, are worth keeping—if they don't backslide, which, unfortunately, they seem to have a tendency to do. The illustrations of late usually possess good composition and conception—and a general appearance of incompleteness and haste. He has possibilities, apparently; but they are not easily realized in drawings consisting mostly of black white space and outlines, or opaque black blocks. The stories are science-fiction; and the illustrations should strive for some accuracy—some approach to the photographic. The ability to draw the human figure well means little otherwise. Mayan, Kramer, Osmore, and miscellaneous similar illustrators, all have most of life's faults with few of his virtues. In the old days the illustrators drew some good machinery, imaginative backgrounds, disproportioned bipeds purporting to be human—and put some care and detail into their work. Their efforts were usually complete and finished. Now we have fine, upstanding figures of men and women in well-portrayed action, surrounded by vaguely futuristic shapes and outlines of indeterminate objects—I refer to the illustrations of the latter group of artists. I'm never sure what I'm looking at when I gaze over some of their work. Now if combination of the merits of the old-time illustrations with the later ones could be effected, here would be little to complain of. Finlay's work is a good example of what illustrations can and should be. The work of today is inherently better art—if that means anything. But it's small satisfaction.

I'm glad to learn that Schoonman illustrated "Gray Lensman," although I'm not too pleased to hear that he did it with that new black-and-white contrasty work that appeared in this latest issue. His are the best illustrations in this issue; but the style in which he illustrates "Flight of the Dawn Star" or "Greater Than Gods" is better, if carefully done. But both are good, and I'm not complaining.

The cover, by the way, was very good.—Ralph C. Hamilton, 846 College Ave., Wooster, Ohio.

Well, he's got a character worth developing!

Dear Mr. Campbell:

Herewith my impressions of the latest Astounding. The cover was good, except for one point: I realize Gray Lensman have to be hard, but did Artist Rogers have to make Kinsman look so much like a movie gangster?

"Gray Lensman" itself is all and more than I had hoped. On rereading "Galactic Patrol" once more in the light of this, the first part of its sequel, I find that my suspicions about that first story are confirmed. Dr. Smith, I suspect, is far more interested in the development of Kimball Kinsman's character than in

the more events which occur during the Lensman's galactic wanderings, superlatively interesting and brilliantly described though these events may be.

In other words, Dr. Smith has, I think, written what are more truly novels in the modern sense of the word than anything—except Weinbaum's two Flame stories—yet done in science-fiction.

More power to you, doctor! A few more efforts and we'll be getting stuff that will pass the most stringent tests of the literary critic.

The supporting bill was quite adequate, considering the competition offered by "Gray Lensman." But in view of that competition, it would be hardly fair to even try to rate them.—A. Arthur Smith, Queen's University, Kingston, Ont., Can.

Some rated "Rust" and "Shawn's Sword" tops.

Dear Editor:

Allow me to congratulate you on your first installment of the serial "Gray Lensman." Dr. Smith is, to my notion, the finest s-f author alive, and I don't think that I am alone in my belief.

"Space Rating" was good. In some ways it was the best story I have read during the past year. I was rather amused, however, at the author intimating that Rigel is one of the "nearest" stars. Rigel is probably the farthest away of the first-magnitude stars—about four hundred light years. (112 parsecs, if you prefer.) Canopus—invisible in northern United States—might be farther, but this is uncertain. Also, it is not, to my knowledge—although I am certainly not an authority—listed as a quadruple star, as the author would have us believe. Otherwise there was a lot of impossible "science," and the psychology was excellent.

"Episode in Deep Mine" was a very nicely written little story. I liked the character Blackston.

"A Question of Salvage" was well written, but the "ethereal storm," on which the story is based, got under my skin. This "pseudogravity" is something that should be left for the fairy stories.

"Rust" was fair. It is hard to rate this story, as it was a little on the queer side. It was striking, but I did not like it particularly. Maybe I am hard to please!

Of "Shawn's Sword" I can only say that I am surprised you printed it.

The articles were very good. "Hunting Big Game"—an super-nova—especially.

In your "Brass Tacks" I notice quite a bit of discussion on the subject of your illustrations. Is that how I would like to suggest that your artists read the stories before they draw the pictures. In the illustration for "A Question of Salvage" there are five figures, while in the script there are only three on the surface of the asteroid.

Of all the s-f magazines, yours is unquestionably the best. I have been a reader off and on for several years.

Having passed my thirty-first birthday some time ago, I thought I might be immune to writing in to the discussion columns of a magazine, but I succumbed to the temptation. Yes, it's my first offense.—G. K., Northern Hotel, Hibbing, Minn.

Rogers has a Grade A cover coming next month!

Dear Mr. Campbell:

The time has come to break my summer silence, and the October Astounding offers the best of material for comment. Before I discuss the issue itself, however, I would like to say a word or two concerning some of the letters.

Mr. Kapetansky in his letter on the Jekyll-Hyde theory of the fantasy reader has presented a very interesting and probably quite correct discussion of a question that has bothered and interested a great many people. At the end of his very scholarly treatment of the subject he asks, "—is the reality of the reader's enjoyment of both Astounding Science-Fiction and Unknown explicable in more simple terms than I have used?" My answer is, "Yes." He has answered that question himself in the third sentence of his letter. The element of escape is fundamentally the reason fantasy readers usually enjoy both types of magazine. I realize, of course that all entertainment is an "escape mechanism," but s-f and fantasy-fiction are the most interesting of these "mechanisms." Essentially fantasy and science-fiction are the same. In one type we perceive witches riding on broomsticks and nasty wizards whisking you away to a far land in the twinkling of an eye, while in the other type Buck Rogers chases Killer Kane through Martian skies with a flying belt and Jack Williamson uses his famous gun.

—supply your own endings, they all sound good—to send the villain to perdition in the vastness of inter-universal space. Don't get me wrong. I enjoy them, too, or I wouldn't buy the magazine. What I'm trying to point out is that both types of fiction are escape fiction, and there is the reason that the audiences of both magazines are composed of almost the same people.

No, Mr. Goldstone, it is not treason to care slightly for Dr. Smith and his works. Indeed, you are not entirely alone in your indifference, but we who love the good doctor's work pity you and your kind. You miss so much enjoyment.

Now to the present issue. I'll make it short and sweet.

1. "Gray Lensman."
2. "Shawn's Sword."
3. "A question of Salvage."
4. "Hunting Big Game."
5. "Earth's Second Moon."

The art work is steadily improving; all the illustrations were good, and Rogers did a typically good job on the cover. I take back what I said about Schenckman. He has outdone himself. Now I must bow my head in shame and admit that I evidently don't know what I want. I spoke for the retraction of the "book jackets," and yet I was horribly disappointed when you didn't have one on the story Weiss pictured. By the way, don't lose him. He's still good, no matter what anyone says.

There, I guess that's all, except to thank you for the increase in Brass Tacks and Discussions. I don't expect it to last after the current serial is through, but I'm hoping.—Charles W. Jarvis, 3977 Ighart Ave., St. Paul, Minn.

Well, we don't have all smooth pages yet, but we have another step this month—Yes, we have Astoundings for the latter half of 1936 and all of 1937.

Dear Mr. Campbell:

I have been reading Astounding for several years now as a "silent fan." This, consequently, is my first letter to you, but it probably will not be the last. After taking the initial step of breaking my long silence, you, most likely, will hear from me regularly.

After witnessing the phenomenal rise of Astounding in the science-fiction field in the past few years I can draw but one conclusion. Astounding is now "the champagne" of science-fiction. Except for a slight relapse in the October issue, it seems to be steadily improving yet.

I'll give you my rating of stories first. As "Gray Lensman" is a serial, I'll defer judgment on that until it is complete.

Story number one—"A Question of Salvage." The yarn is "real" from stem to stern. Jameson made his characters live. The only fault I can find is that it turned out quite gal at the end. Too gal.

Story number two—"Space Rating." A close second.

Story number three—"Episode on Deep Miner." This one only fair. Not at all up to your usual standard of short stories.

"Rust" and "Phew's Sword" are hardly worth considering. I can see no reason for allowing such trips as the latter to appear in print in Astounding. In one of the other mags, yes, but not in Astounding.

The redeeming feature of these is the appearance of the two excellent articles. These articles more than make up for the pair of aforementioned stories. Believe me, Mr. Campbell, good articles do much in establishing science-fiction magazines and, therefore, science-fiction, also.

The cover is par excellence. It is, in fact, one of the best I have ever seen on any s-f magazine.

When will we get the whole magazine with all smooth-finish pages? They certainly are an improvement over the rougher pages. When that day comes I will mark it down as the date of another forward step taken by Astounding.

I am sorry to hear that quarterlies are economically impossible. A grand era of science-fiction went out with the quarterlies.

Important question: Do you have any back numbers of Astounding below 1937?

Well, that about concludes my salvo of remarks on Astounding in general and the October issue in particular. Long live Astounding, and let it be an example of the achievement of a Campbell. (Yes, I'm one.)—Bill K. Campbell, 1111 West Thirty-second St., Minneapolis, Minn.

"How the monster lost his plumbing—"

Dear Mr. Campbell:

One of your recent correspondents pointed out some inaccuracies in my filler on the restaurant Bob Latimer, which was caught last winter near East London, Cape Province, South Africa. I'm sorry about them; I got my information from a usually reliable source, and didn't discover that all was not well with it until about the time your magazine was going to press.

However, when I did make that discovery, I wrote a friend of mine who lives in East London, asking for the inside dope on the examination—or rather lack of examination—of Latimer, and the mysterious loss of its privetous guts. Your readers might be interested in his reply of August 29th, which gives a pretty good idea of what happened:

"This aged monster was hauled on board a trawler by an ignoramus such as self, except that he didn't bring it home to photograph and store up for distribution among relations for breakfast, as I definitely should have done. Instead, he thought it looked odd and, instead of taking it to the Aquarium, where it would have still been enjoying life, he dumped it, to shortly after expire, at the Museum. Miss Latimer recognized an acquaintance she had met in her search for knowledge, and sent it to be mounted, with instructions for the taxi fellow to wait for Professor Someone or other of Rhodes University College to call. She could not contact the professor by telephone, so wrote to him. A week or so later, 'taxi' wrote, saying that monster stank like an overripe drum, and it came to light that professor was away on holiday and had had no news, or something. Miss Latimer had sketched the animal and followed with sketching its internal organs, whatever they are—plenty of that in our beef

in this country—and they thereupon dissected.

"Since then it has been on view here at a dime a shot, and until last week it cruded, by a steady process of dripping, about twelve fluid ounces of oil from its skin and carcass. This oil started playing havoc with the possibility of remaining preserved, so monster and Latimer have taken a trip to Capetown to the leading brain in the country to be fixed up again. More I cannot tell you, as both are still away, and as yet no news as to condition."

It appears that the loss of the restaurant's works was the fault more of bad luck than of Miss Courtney Latimer, the curator of the East London Museum. It's probable that somebody will catch another Latimer one of these days, and when that happens, let's hope that the catch occurs near a place where adequate refrigerating facilities exist.—L. Sprague de Camp.

We got a letter from E. E. Smith saying Rogers and he agreed on how Kinnison looked.

Dear Mr. Campbell:

Unaccustomed as I am to indulging in long poems of praise of science-fiction magazines—indeed, my tendencies heretofore have been toward the other extreme—I really must break down and admit that the October Astounding was what is vulgarly termed a "super-issue." It truly was a masterpiece, a veritable gem. In fact—and, oh, how I hate to admit it—there is practically nothing in it, other fiction, art work, formal, or otherwise, for me to beef about.

Take the cover, for instance. What am I going to crab about in that admirable example of true art? How can I criticize Mr. Rogers' masterful representation of the supremacy of all supermen, at his distinctive and highly laudable treatment of his subject? Can I complain because the aforementioned artist has immortalized in paint the character, Kinnison Kinnison, as no other science-fiction character has ever before been immortalized? For I feel reasonably certain that Rogers' cover for "Gray Lensman" will serve greatly to make Kinnison remembered by fans even longer than Hawk Carne and Dirk Boston have to date.

Well, the foregoing must have conveyed to you the fact that I admired very much Rogers' cover. But this also must I tell you: that, with his three covers so far, Mr. Rogers has proved that he is the best artist on your staff, and surely one of the best in s-f history, with only the inimitable Paul his peer. I sincerely hope that a majority of your future covers be done by Robert Rogers. Oh, you—incidentally, the October cover is the best of the year so far.

So much for the cover. Now for the stories. First is "Gray Lensman," by a considerable margin. Even from what little I have seen of it, I think this story is quite a bit superior to "Galactic Patrol," mainly because many points are cleared up in it which were left incomplete in "Patrol." I refer not only to the plot, but also, to a certain extent, to the characters. In "Lensman," the character of both Kinnison and Nurse MacDougall is elaborated upon, thus making the story more gratifying from a literary standpoint. You must admit that "Patrol" was rather spotty and was not extremely well received for that reason. But, I think that "Lensman" will be liked because, as I have said before, it is more complete.

Well, anyway, the first installment of "Gray Lensman" was very entertaining, and I commend Dr. Smith for his delightful style, which somehow seems to blend nicely the superstitious and the human aspects of his tale. I have good reason to believe that I will still

mainly Judge Smith's novel the best story of (completed in, that is) 1941. It will take a mighty fine yarn to beat it!

Well, now to come to Schneeman's illustrations for the epic. And still I am not permitted the slightest excuse to criticism. C. K. did a marvelous job on them, and they transcend by far any other work he has done. His new style is extremely effective. When I heard that Schneeman was to illustrate the yarn I was at the same time pleased and disappointed. Pleased because I was glad to know that Womac was not to do the art work; and disappointed because I had hoped very much that you would reinstate the poorless Dold in time for him to do it. But when I saw Schneeman's work, the disappointment was, to an extreme degree, diminished, because I realized then that even Dold could not have done much better.

In second place in the ratings for the October number we find Malcolm Jameson's original, refreshing story of space salvagers. I do not claim to have read every science-fiction story written; indeed, I have read a very small percentage of them; nevertheless, Jameson's idea and development were new to me, and I enjoyed them very much. I think Jameson has definitely established himself as a reliable author with this story. After getting off to a bad start with his awful "Eviction by Isoterm," he picked up remarkably with "Beard" and "Mill of the Gods," and seems to have made the grade. Incidentally, he appears to do better on the novelette length. How about more longer ones from him? But here's one complaint I have to make. I think you should have saved this story and used it later as a feature novelette. In my opinion, an extremely effective spaceship cover could have been based upon it. You know, something a little different in interplanetary covers.

Schneeman did very well on the illustrations for the yarn, though they are not quite as good as those for "Oray Lammam." I notice that Schneeman did a great majority of the drawings for this issue. Looks as if he's replaced Womac as feature artist. I hope so.

That leaves the four shorts to battle for the remaining positions. And very good shorts they are, too. Not a bad one in the bunch. Only one of them, however, is really outstanding, and that is "Riot," by Joseph K. Kellman. I don't know why, but this little tale went over with me in a big way. Maybe it's because it is written in the familiar style which I have gradually come to associate with Lester del Rey. Essentially, the plot is nothing new, but its treatment and style lift the story above the mass. I hope to see more stories of this kind in Astounding, and also more stories by Kellman, wherever he is. Orban's illustration was way above his usual standard. If he drew like that all the time I'd like him.

Well, that leaves three stories, all good, and almost in a three-way tie. Nevertheless, if I must rate them, I guess I'd put "Episodes in Deep Miner" fourth. Walton's tale, written in the true Weinbaum manner, is satisfactory to a high degree. It is gratifying to know that there are authors who can turn out the Weinbaum type of tale. Somehow one never gets tired of them. I hope Walton sells you more along this line, for he seems to have quite a bit of talent in this field. Womac's drawing was O. K., nothing special.

Now I have to go through this business of differentiation again. Well, I believe that Orger has a little bit of an edge over Berryman this time. "Shawn's Sword" was interesting mainly because of characterization. It was a great improvement over the ghostly "Heavy Planet." Berryman's tale was nothing to compare with his excellent "Special Flight," but it was above the average, anyway. Orban's illustration for "Shawn's Sword" was fair, but I can name ten artists that could have done it better.

Now, I want to give you a little advice about Kramer. He is all right—sometimes.

And when he drew the picture for "Space Rating" was not one of those times. In fact, all his "smudge" illustrations were drawn at such times. In other words, his "smudge" illustrations are terrible. But, when he uses the fine-line-shading technique, such as was used to illustrate "Breaking All Others" and "Over the Border" in October, he is very good. So how about having him do the fine-line work from now on? I know that if I see many more of these smudge messes he makes for Astounding, I am going to have an apoplectic fit or bust a blood vessel.

Well, that's about all, I guess. I haven't read the articles yet. Probably won't for several months. Probably never will, unless I get an attack of scientific zeal some day and dive into them. I disagree with the Analytical Laboratory about "Treasure Trove." I think it should have been third, at least. Can't understand why "Heavy Planet" placed above it. Miller's egg, of my favorite, you know. All the other fans must be crazy. It couldn't be I who's wrong! Glad to see Heinlein and Del Ray will be in the next issue. "Life Line" was a pretty good story. I'm getting tired of De Camp's articles, however. I wish you'd keep him in October. He does better there, I think.

Summary, this time, is going to be easy. The whole issue's swell. Smith, Jameson, and Kellman outstanding. I want more of them and Walton, Orger, and Berryman, too. They're all good authors. Give us more of the Weinbaum and Del Ray types of stories, also. Among the illustrators, Rogers and Schneeman are tops. Here's another frantic plea for Paul covers and Dold and Finlay interiors. Give us fine-line stuff from Kramer! That is all. Keep up the good work.—Don Johnson, 2320 Kanwood Avenue, Kansas City, Missouri.

For the perfect magazine.

Dear Mr. Campbell:

Undoubtedly you have heard quite a number of fans tell you personally just what their idea of a good science-fiction magazine was, but there are a number, such as I, who live far enough away that they cannot tell you save through correspondence. I have watched with dismay while many new magazines have appeared in the field, but I am glad that there are a very few magazines such as yours which still hold high standards. By this situation I have been prompted to draw up an outline of what, in my mind, helps to make a good magazine.

I. Stories:

1. Which are refreshing and absorbing so that one forgets other things.
2. Whose plots are either new or are interesting variations of old ones.
3. Which contain a pleasant balance between fiction and science.
4. Which are not given to sensationalism.
5. Let stories about people be human and not stilted.

II. Articles:

1. Whose facts are authentic.
2. It is well if these present ideas and facts which, though interesting, are not widely known.
3. It is well that, save for exceptional circumstances, not more than one per issue be printed.

III. Illustrations:

1. Which are done by good artists.
2. Let the details of the picture agree with the text.
3. Beginning illustrations should be of scenes suggestive of the whole story.
4. Cover illustrations, of course, are meant

to sell the magazine and what is there suggests what is inside.

IV. Regular Departments:

1. Which are not so numerous that the rest of the contents suffer.

2. Which are of interest to the readers and have a relation to science-fiction.

3. Those I like: (a) An editor's page. (b) A preview of future issues. (c) A reader's department, containing interesting letters impartially selected.

4. I don't like quines.

Such, in my opinion, is Astounding. I do not mean to say it's perfect; it is not, but it seems to make an effort in that direction. Most of these points I have picked because they have been violated at some time by some magazine. To me, it seems some of the more flagrant violations have been in science-fiction.

With this outline particularly in mind, I looked at the last issue of Astounding. "The Luck of Ignatz" struck me as being the best story. The plot isn't new, but it certainly is an interesting variation of an old. Its characters are nicely portrayed. It has that certain reality that puts over a story. It is completely absorbing.

The article by Willy Ley was better than you have printed for some time. It is excellent ridicule against some authors who over-use rays as weapons. The logic and clarity was what surprised me. True a remarkable argument.

I am puzzled by the cover. What does it represent? I couldn't trace any connection between it and any story.

Having written what I had intended, I bid you good day and good luck, "until Ignatz lays hard-boiled eggs."—M. L. Merritt, Jr., 2121 NE Twenty-eighth Ave., Portland, Oregon.



SCIENCE DISCUSSIONS

I know there are formulas, but I've forgotten 'em.

Dear Mr. Campbell:

Mr. Drew's problem about the rope which is supposed to float up through the tank of mer-

cury has such a simple answer that I can't refrain from explaining it. It is simply that just as much weight enters the tank through the pulley—that must be some pulley—as "wrecks" above it. Hence the rope displaces just as much as it did before, hence no reaction, hence it won't work.

As for the by-the-best-escape-lifter, I'll say the answer isn't obvious. In fact, it is so far from obvious that I'm breathlessly waiting for someone else's explanation of it. I never was much good at physics, anyway.

Since you seem to be running a puzzle department, maybe someone would like to tell me how to find the center of gravity of a cone in terms of the radius of the base and the altitude. I suppose it's extremely simple, but somehow I can't get it.—John D. Redden, 20 South Raymond Avenue, Pasadena, California.

"Complete and correct explanation for both puzzles—" Charles Drew.

I. Merritt Works,
Butte, Mo., U.S.A.

Dear Mr. Campbell:

You may have heard of our concern, which began its work on the entirely logical theory that "If you can prove it, it is so."

We have shown the Drew Special By-the-best-escape-lifter to our engineers, and they have designed a simple self-elevating bicycle on the principle, with a middle, foot pedals and a joy stick giving a small arc of control. The entire staff of our perpetual-motion department was called out to work on it, and a working model was turned out in short order, with ball and roller bearings to reduce friction.

Our test pilot attempted a flight, but found that the force was not sufficient to raise the machine unless the spools were rotated furiously at three or four revolutions per second. Another model was therefore made, using smaller weights and a gear train to whirl them at a high speed. This was entirely successful, and the pilot made a flight of thirty seconds' duration, reaching a maximum height of forty-two feet. He remarked, on regaining consciousness, that the apparatus "lifted easy, but was too deprece hard to balance." It was also evident that it would take considerable practice to be able to make a smooth landing.

A third model was therefore made, with the center of gravity below the wheel and special shock absorbers beneath. Friction was further reduced by allowing the circular track to revolve on roller bearings. This model justified our hopes, and handled beautifully.

Unfortunately, in the middle of the flight the machine suddenly faltered, and in spite of violent pedaling, began to fall. The pilot bailed out safely by parachute, but was unable to account for the crash.

It was soon discovered that Professor Zerk, an enthusiastic reader of Astounding, had also seen Mr. Drew's letter, and had just found the flaw in his argument. As a result, of course, the principle was proved unworkable, and the machine at that instant plunged to its doom.

Professor Zerk, upon request, issued the following statement:

"I analyzed the forces and motions with reference to several sets of co-ordinates in motion with respect to each other, and found the resulting force to be the same in each case. This implies that the acceleration, and hence the speed, with respect to any system of co-ordinates is always the same. As a result of relativity theory, the machine must instantly attain the velocity of light, but as this is impossible with a finite mass and force, I begin to doubt that the principle will ever be entirely practical."

We are much disappointed, but our perpetual-motion department has returned to its work, and is busy with Mr. Drew's buoyancy meter. Yours truly, N. E. Thengsco.

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Dear Sir: Don't know what all the fuss is about of some plane enough to me that if the water push up on the circular track they will push down just as hard on the spokes when the spokes try to slow down the water at the bottom, and then try to speed them up again. And if the spokes is fastened to the frame neither one will get very far. Yours truly & oblige, The Ogle Boy.

Further report from Prof. Zerkow:

"If the buoyant rope of Mr. Drew's motor is perfectly uniform in cross-section, the liquid will have no buoying effect whatsoever, as, by Pascal's principle, the pressure exerted by a liquid surface is perpendicular to that surface, and in this case has no vertical component. If the rope is not uniform so that its cross-section at the top of the liquid is smaller than its cross-section at the bottom, a buoyant rope will actually sink. In any case, the rope will move only to a position of equilibrium."

It appears from this that our hopes for this type of free power are weak.—Donald West, R. E. C., Acadia University, Nova Scotia.

Space suits.

To Mr. Ley

Your article, "Space War," was a step in the right direction. Congratulations!

Now let's look over insulation and pressure.

Take a look at the gondolas used on the stratosphere balloon. The problems of pressure and insulation are much the same as in a spaceship. If the average science-fiction author had anything to do with the design of such gondolas they would look like Mother's bathysphere!

Why do the authors persist in "unbreakable" insulation or vacuum between double walls? Especially the vacuum. What could be siller in the absolute vacuum of space? The only logical insulation is to chrome plate the ship and reflect the heat. Mr. Ley, your dead-black warships would probably have a lot of trouble with heat from the sun, but that is for you to figure out.

Why do authors put refrigerators on their ships? All a refrigerator does is to move heat from one place to another. Only certain chemical reactions actually absorb heat, and they are far too heavy and bulky for a spaceship.

Why make a space suit of heavy metal? Look what a football goes through without having a relay. There has recently been several flights made into the stratosphere in which the pilot wore an air-tight suit instead of having a sealed-cabin plane. These suits were, in all respects, practical space suits, yet they had no "unbreakable double-glass helmet with insulating gas between to keep out absolute zero of space," nor did they have any "double inner lining to provide protection against both cold and heat, gas-impregnated cellular material and asbestos." One such suit I have in mind was worn over an ordinary electrically heated flannel suit, which in turn was over ordinary everyday red flannel!

By the way, the amount of meteors striking any given area of the earth's atmosphere equal in area to the outside area of a spaceship, taken over a period of time such as would be required for a space journey, looks very bad for the spaceship.—Ray Lavender, Route 1, Delaware, Ohio.

To the defense of rays.

Dear Sir

As a rule, your stories are good and your articles better, the article entitled "Space War," by Wally Ley, is, however, the exception that proves the rule.

Before I attempt to back up the above state-

ment, perhaps I had better give my qualifications. I have some fifty-odd hours of college chemistry, twenty-two hours of college physics, and thirty-four hours of college math. I spent three years in the National Guards attached to a battery of 155 mm. guns.

I am too lazy to attempt to check Herr Ley on his statements of armor weight, gun weight, or recoil, but they seem reasonable, so I will allow them to stand without argument—they would probably stand, anyway.

Taking up Herr Ley's arguments in order, I wonder if it ever occurred to him that it would require quite a good power plant to lift a "fair-sized spaceship, about ninety yards long and twenty yards in diameter," from the surface of the earth and then set it gently down again? It seems to me that the weight of the mechanism required to divert part of this power from drive to ray generator would not be prohibitive. Vacuum-tubes are delicate, but could be made stronger if necessary, and, if not, I believe I would rather risk having a tube blow during the course of a battle and leave me without offensive weapons than to have an enemy shell land in the ship's magazine.

He kindly granted the possibility of dangerous rays and then stated that he did not believe they could be developed in the near future. Micro waves—radio—from 10 cm. down to wave length would be quite disconcerting if there were some 10,000 watts being fed into them. You see, they are picked up by a good conductor as heat. They may not be what the science-fiction author has in mind when he refers to heat rays, but they'll work quite nicely, I believe, and they focus into the narrowest light beam. As for ray shields, there is always heterodyning.

As to the impossibility of "holding a ray on a fast-moving distant target, that might be practically inevitable with black paint against the background of black space," just how many men could hit a black disk twenty yards in diameter on a dark night at such a range and moving with such a velocity that a flashlight—just another ray—could not hold it?

In space a heat ray is an accumulative affair in that heat is dissipated only by radiation, which is a notoriously slow process at ordinary—8°-300° C.—temperatures. This would mean that the heat ray would not have to be held on the target.

As for the disadvantages of guns, Herr Ley has neglected to mention that in warfare on earth, when a heavy gun is firing at a target the gun is relatively motionless with respect to the target. This simplifies aiming considerably. Dog fights between planes are never long-range affairs because of their relative velocities. Going back to ground fighting, however, a man of twenty yards or so is as good as a hit because of the burning range of the shell. A miss of one cm. in space is as good as if the shell had not been fired.

When Herr Ley advocates the use of Tio in space, it is obvious he has never been around them when they were fired. I have, and I wouldn't care to be in a closed room—even if it were evacuated—with one firing several rounds to the minute.

During the World War gas was used frequently so as to force the men to don gas masks. The masks cut down the firing efficiency noticeably. I wonder what effect a space suit would have on accuracy?

The science of exterior and interior ballistics is built around the presence of air and a fairly strong gravitational field. It would take some time to develop a science of vacuum ballistics.

Reading this over it appears that I have laid the foundations—or destroyed them—for a good war—right here on earth between Herr Ley and me. I'll try to prepare myself for his counter-attack, because I don't believe I destroyed him entirely.—J. M. Crippen, 1619 Broadway, Manhattan, Kansas.

GRAY LENSMAN



PART III

By E. E. SMITH, Ph. D.

SYNOPSIS:

When the inertialess drive was perfected and commerce throughout the Galaxy became commonplace, crime became so rampant as to threaten civilization. Then came into being the Galactic

Patrol, an organization whose highest members, the Lensmen, are of unlimited authority and scope. Each is identified by his Lens, a pseudoliving, telepathic jewel matched to the ego of its owner by the Arisians. The Lens cannot be

counterfitted, since it glows with color when worn by its owner and kills any other who attempts to wear it.

Of all the eighteen-year-olds of Earth, only about one hundred win through the five-year period of weeding-out and become Lensmen. Kimball Kinnison graduates Number One in his class, and sets out to capture one of the new-type ships of the "pirates"—in reality Bostonians; adherents to a culture as widespread as civilization—to learn the secret of their source of power. He succeeds, but with Van Bushirk, a Valerian, is compelled to take to a lifeboat.

They land upon Volantic, and aid Wersel, a scientist, in overcoming the Overlords of Delgon, a parasitic race of a neighboring planet. En route to Earth Kinnison's *Bergsholm*, the generator of the force which neutralizes inertia, breaks down, and he lands for repairs upon Trencu, the planet upon which is produced thionite, the deadliest of all habit-forming drugs. He reaches Earth with his data.

He begins a search for Grand Base, Bostonian's galactic headquarters, believing that Helmath, its commander, may be Bostone himself. He is wounded seriously, and in Base Hospital is cared for by Nurse Clarrissa MacDougall. Surgeon-general Lory and Port Admiral Haynes, Chief of Staff, promote a romance between nurse and Lensman.

Recovering, Kinnison goes back to Arisia for advanced mental training, acquiring the sense of perception and the ability to control the minds of others. He investigates Grand Base, which is located in a star cluster outside the Galaxy; finding that it is impregnable to direct attack. A zero time is set, at which the Patrol is to attack in force. He goes to Trencu, obtaining a vast supply of thionite, and gets into Grand Base. The Bostonians are weaving thought-screens, but by working through the mind of a dog Kinnison breaks their screens. He dumps his thionite into the

primary air duct, thus wiping out all the personnel except Helmath. He kills Helmath in hand-to-hand combat. The Patrol attacks. Grand Base falls.

He discovers that Boston's headquarters are in another Galaxy, and decides that the best way to get a line upon it is to work upward through the drug syndicate. Disguised as a dock walloper he frequents the saloon of the drug baron of the planet Rodelix, and helps raid it. He calls a Contention of Science, which devises means of building bombs of negative matter.

He investigates the stronghold of Prelin, Boston's Regional Director, but cannot get through his screens. Changing his plan of action, he becomes a meteor miner. He finds a rich meteor, buries most of it, and starts out to celebrate.

XII.

As has been implied, Miners' Rest was the biggest, widest-open, least restrained joint in that entire sector of the Galaxy. And through the underground activities of his fellows of the Patrol, Kinnison knew that of all the king-snipes of that lawless asteroid, the man called Strongheart was the big shot.

Therefore, the Lensman landed his battered craft at Strongheart's dock, loaded the equipment of the hijacker's boat into a hand truck, and went in to talk to Strongheart himself. "Supplies—Equipment—Metal—Bought and Sold" the sign read; but to any experienced eye it was evident that the sign was conservative indeed; that it did not cover Strongheart's business, by half. There were dance halls, there were long and ornate bars, there were rooms in plenty devoted to various games of so-called chance, and most significant, there were scores of the unmistakable cubicles in which the basest passions and lusts of man were satisfied.

"Welcome, stranger! Glad to see you. Have a good trip?" The divekeeper al-

ways greeted new customers effusively. "Have a drink on the house!"

"Business before pleasure," Kinnison replied, tersely. "Pretty good, yes. Here's some stuff I don't need any more that I aim to sell. What'll you gimme for it?"

The dealer inspected the suits and instruments, then bored a keen stare into the miner's eyes; a scrutiny under which Kinnison neither flushed nor wavered.

"Two hundred and fifty credits for the lot," Strongheart decided.

"Best you can do?"

"Topa. Take it or leave it."

"QX, they're yours. Gimme it."

"Why, this just starts our business, don't it? Ain't you got cores? Sure you have."

"Yeah, but not for no"—doubly and unprintably qualified—"damn robber. I like a louse, but you suit me altogether too damn well. Them suits alone, just as they lay, are worth a thousand."

"So what? For why go to insult me, a business man? Sure I can't give what that stuff is worth—who could? You ought to know how I got to get rid of hot goods. You killed, ain't it, the guys what owned it, so how could I treat it except like it's hot? Now be your age—don't burn out no jets," as the Lensman turned with a blistering, sizzling deep-space oath. "I know they shot first, they always do, but how does that change things? But keep it your shirt on yet. I don't tell nobody nothing. For why should I? How could I make any money on hot goods if I talk too much with my mouth, huh? But on cores, that's something else again. Meteors is legitimate merchandise, and I pay you as much as anybody, maybe more."

"QX," and Kinnison tossed over his cores. He had sold the bandits' space-suits and equipment deliberately, in order to minimize further killing.

This was his first visit to Miners'

Rest, but he intended to become an habitue of the place; and before he would be accepted as a "regular" he knew that he would have to prove his quality. Buckoes and bullies would be sure to try him out. This way was much better. The tale would spread; and any gunman who had drilled two hijackers, dead-center through the face-plates, was not one to be challenged lightly. He might have to kill one or two, but not many, nor frequently.

And the fellow was honest enough in his buying of the metal. His Spaldings cut honest cores—Kinnison put micrometers on them to be sure of that fact. He did not under-read his torsionometer, and he weighed the meteors upon certified balances. He used Galactic Standard average-value-density tables, and offered exactly half of the calculated average value; which, Kinnison knew, was fair enough. By taking his metal to a mint or rare-metal station of the Patrol, any miner could get the precise value of any meteor, as shown by detailed analysis. However, instead of making the long trip and waiting—and paying—for the exact analyses, the miners usually preferred to take the "fifty-percent-of-average-density-value" which was the customary offer of the outside dealers.

THEN, the meteors unloaded and hauled away, Kinnison dickered with Strongheart concerning the supplies he would need during his next trip; the hundred-and-one items which are necessary to make a tiny spaceship a self-contained, self-sufficient, warm and inhabitable worldlet in the immense and unfriendly vacuity of space. Here, too, the Lensman was overcharged shamelessly; but that, too, was routine. No one would, or could be expected to, do business in any such place as Miners' Rest in any sane or ordinary percentage of profit.

When Strongheart counted out to him the net proceeds of the voyage,

Kinnison scratched reflectively at his whiskery chin.

"That ain't hardly enough, I don't think, for the real, old-fashioned, stem-winding bender I was figuring on," he ruminated. "I been out a long time and I was figuring on doing the thing up brown. Have to let go of my nugget, too, I guess. Kinda hate to—been packing it around quite a while—but here she is." He reached into his kit-bag and tossed over the hump of really precious metal. "Let you have it for fifteen hundred credits."

"Fifteen hundred! An idiot you must be, or you should think I'm one, I don't know?" Strongheart yelped, as he juggled the mass lightly from hand to hand. "Two hundred, you mean . . . well two fifty, then, but that's an awful high bid, mister, believe me. I tell you, I couldn't give my own mother over



three hundred—I'd lose money on the goods. You ain't tested it, what makes you think it's such a much?"

"No, and I notice you ain't testing it, neither," Kinnison countered. "Me and you both know metal well enough so we don't need to test no such nugget as that. Fifteen hundred or I fit to a mint and get full value for it. I don't have to stay here, you know, by all the nine hells of Valeria. There's millions of other places where I can get just as drunk and have just as good a time as I can here."

There ensued howls of protest, but Strongheart finally yielded, as the Lensman had known that he would. He could have forced him higher, but fifteen hundred was enough.

"Now, sir, just the guarantee and you're all set for a lot of fun," Strongheart's anguish had departed miraculously upon the instant of the deal's closing. "We take your keys, and when your money's gone and you come back to get 'em, to sell your supplies or your ship or whatever, we takes you, without hurting you a bit more than we have to, and sober you up, quick as scat. A room here, whenever you want it, included. Padded, sir, very nice and comfortable—you can't hurt yourself, possibly. We been in business here for years, with perfect satisfaction. Not one of our customers—and we got hundreds who never go nowhere else—have we ever let sell any of the stuff he had laid in for his next trip, and we never steal none of his supplies, neither. Only two hundred credits for the whole service, sir. Cheap, sir—very, very cheap at the price."

"Um-m-m"—Kinnison again scratched meditatively, this time at the nape of his neck—"I'll take your guarantee, I guess, because sometimes, when I get to going real good, I don't know just exactly when to stop. But I won't need no padded cell. Me, I don't never get violent. I always taper off on twenty-

four units of bentlam. That gives me twenty-four hours on the shelf, and then I'm all set for another stretch out in the ether. You couldn't get me no benny, I don't suppose, and if you could it wouldn't be no damn good."

This was the critical instant, the moment the Lensman had been approaching so long and so circuitously. Mind was already reading mind, Kinnison did not need the speech which followed.

"Twenty-four units!" Strongheart exclaimed. That was a heroic dose—but the man before him was of heroic mold. "Sure of that?"

"Sure I'm sure; and if I get cut weight or cut quality I cut the guy's throat that peddles it to me. But I ain't out. I got a few good jolts left. Guess I'll use my own, and when it gets gone go buy some from a fella I know that's about half honest."

"Don't handle it myself," this, the Lensman knew, was at least partially true, "but I know a man who has a friend who can get it. Good stuff, too, in the original tins; special import from Corvina II. That'll be four hundred altogether. Gimme it and you can start your helling around."

"Whatja mean, four hundred?" Kinnison snorted. "Think I'm just blasting off about having some left, huh? Here's two hundred for your guarantee, and that's all I want out of you."

"Wait a minute. Jet back, miner!" Strongheart had thought that the newcomer was entirely out of his drug, and could therefore be charged eight prices for it. "How much do you get it for, mostly, the clear quill?"

"One credit per unit—twenty-four for the jolt," Kinnison replied tersely and truly. That was the prevailing price charged by retail peddlers. "I'll pay you that, and I don't mean twenty-five, neither."

"QX, gimme it. You don't need to be afraid of being bumped off or rolled

here, neither. We got a reputation, we have."

"Yeah, I been told you run a high-class joint," Kinnison agreed, amiably. "That's why I'm here. But you wanna be mighty sure that the ape don't gyp me on the dose—looky here!"

As THE Lensman spoke he shrugged his shoulders and the divekeeper leaped backward with a shriek; for faster than sight two ugly DeLameters had sprung into being in the miner's huge, dirty paws and were pointing squarely at his midriff!

"Put 'em away!" Strongheart yelled.

"Look 'em over first," and Kinnison handed them over, butts first. "These ain't like them buzzards' cap-pistols what I sold you. These are my own, and they're hot and tight. You know guns, don't you? Look 'em over, pal—real close."

The renegade did know weapons, and he studied these two with care, from the worn, rough-checked grips and full-charged magazines to the burned, scarred, deeply-pitted orifices. Definitely and unmistakably they were weapons of terrific power; weapons, withal, which had seen hard and frequent service; and Strongheart personally could bear witness to the blinding speed of this miner's draw.

"And remember this," the Lensman went on. "I never yet got so drunk that anybody could take my guns away from me, and if I don't get a full jolt of benny I get mighty peevish."

The publican knew that—it was a characteristic of the drug—and he certainly did not want that miner running amuck with those two weapons in his highly capable hands. He would, he assured him, get his full dose.

And, for his part, Kinnison knew that he was reasonably safe, even in this hell of hells. As long as he was active he could take care of himself, in any kind of company, and he was fairly certain

that he would not be slain, during his drug-induced physical helplessness, for the value of his ship and supplies. This one visit had yielded Strongheart a profit of four or five times what he had left, and each subsequent visit should yield a similar amount.

"The first drink's on the house, always," Strongheart derailed his guest's train of thought. "What'll it be? Telurian ain't you—whiskey?"

"Uh-huh. Close, though—Aldebaran II. Got any good old Aldebaranian bolega?"

"No, but we got some good old Telurian whiskey, about the same thing."

"QX—gimme a shot." He poured a stiff three fingers, downed it at a gulp, shuddered ecstatically, and emitted a wild yell. "Yip-yip-yipee! I'm Wild Bill Williams, the ripping, roaring, rito-dolorum from Aldebaran II, and this is my night to howl. Whee . . . yow . . . owrie-e-e!" Then, quieting down, "This rotgut wasn't never within a million parsecs of Tellus, but it ain't bad—not bad at all. Got the teeth and claws of holy old Klono himself—goes down your throat just like swallowing a mad Radeligian cateagle. Clear ether, pal, I'll be back shortly."

For his first care was to tour the entire Rest, buying scrupulously one good stiff drink, of whatever first came to hand, at each hot spot as he came to it.

"A good-will tour," he explained joyously to Strongheart upon his return. "Got to do it, pal, to keep 'em from calling down the curse of Klono on me, but I'm going to do all my serious drinking right here."

And he did. He drank various and sundry beverages, mixing them with a sublime disregard for consequences which surprised even the hard-boiled booze fighters assembled there. "Anything that'll pour," he declared, loud and often, and acted accordingly. Potent or mild; brewed, fermented, or distilled;

loaded, cut, or straight, all one. "Down the hatch!" and down it went. Here was a two-fisted drinker whose like had not been seen for many a day, and his fame spread throughout the Rest.

Being a "happy jag," the more he drank the merrier he became. He bestowed largess hither and yon, in joyous abandon. He dined blithely with the hostesses and tipped them extravagantly. He did not gamble, explaining frequently and painstakingly that that wasn't none of his dish; he wanted to have fun with his money.

He fought, even, without anger or rancor; but gayly, laughing with Homeric gusto the while. He missed with terrific swings that would have felled a horse had they landed; only occasionally getting in, as though by chance, a paralyzing punch. Thus he accumulated an entirely unnecessary mouse under each eye and a sadly bruised nose.

However, his good humor was, as is generally the case in such instances, quite close to the surface, and was prone to turn into passionate anger with less real cause even than the trivialities which started the friendly fist-fights. During various of these outbursts of wrath he smashed four chairs, two tables, and assorted glassware.

But only once did he have to draw a deadly weapon—the news, as he had known it would, had spread abroad that with a DeLameter he was nobody to monkey with—and even then he didn't have to kill the guy. Just winging him—a little bit of a burn through his gun-arm—had been enough.

So IT WENT for days. And finally, it was an immense relief that the hilariously drunken Lensman, his money gone to the last millo, went roistering up the street with a two-quart bottle in each hand; swigging now from one, then from the other; inviting bibulously the while any and all chance comers to join him in one last, fond drink. The side-

walk was not wide enough for him, by half; indeed, he took up most of the street. He staggered and reeled, retaining any semblance of balance only by a miracle and by his rigorous space-man's training.

He threw away one empty bottle, then the other. Then, as he strode along, so purposefully and yet so futilely, he sang. His voice was not particularly musical, but what it lacked in quality of tone it more than made up in volume. Kinnison had a really remarkable voice, a bass of tremendous power, timbre, and resonance; and, pulling out all the stops, in tones audible for two thousand yards against the wind, he poured out his restfully lusty reveler's soul. His song was a deep-space chanty that would have blistered the ears of any of the gentler spirits who had known him as Kimball Kinnison, of Earth; but which, in Miners' Rest, was merely a humorous and sprightly ballad.

Up the full length of the street he went. Then back, as he put it, to "Base." Even if this final burst did make him sicker at the stomach than a ground-gripper going free for the first time, the Lensman reflected, he had done a mighty good job. He had put Wild Bill Williams, meteor miner, of Aldebaran II, on the map in a big way. It wasn't a faked and therefore fragile identity, either; it was solidly, definitely his own.

Staggering up to his friend Strongheart he steadied himself with two big hands upon the latter's shoulders and breathed a forty-thousand-horsepower breath into his face.

"I'm boiled like a Tellurian hoot-owl," he announced, still happily. "When I'm this stewed I can't say 'partic-hic-hic-ular-ly' without hick-hicking, but I would partic-hic-hic-ularly just like one more quart. How about me borrowing a hundred on what I'm going to bring in next time, or selling you—"

"You've had plenty, Bill. You've had

lots of fun. How about a good chew of sleep-happy, huh?"

"That's a thought!" the miner exclaimed eagerly. "Lead me to it!"

A STRANGER came up unobtrusively and took him by one elbow. Strongheart took the other, and between them they walked him down a narrow hall and into a cubicle. And while he walked flabbily along Kinnison studied intently the brain of the newcomer. This was what he was after!

The ape had had a screen; but it was such a nuisance he took it off for a rest whenever he came here. No Lensman on Euphrosyne! They had coaxed everybody, even this drunken bum here. This was one place that no Lensman would ever come to; or, if he did, he wouldn't last long. Kinnison had been pretty sure that Strongheart would be in cahoots with somebody bigger than a peddler, and so it had proved. This guy knew plenty, and the Lensman was taking the information—all of it. Six weeks from now, eh? Just right—time to find enough metal for another royal binge here. And during that binge he would really do things.

Six weeks. Quite a while . . . but . . . QX. It would take some time yet, anyway, probably, before the Regional Directors would, like this fellow, get over their scares enough to relax a few of their most irksome precautions. And, as has been intimated, Kinnison, while impatient enough at times, could hold himself in check like a cat watching a mouse hole whenever it was really necessary.

Therefore, in the cell, he seated himself upon the bunk and seized the packet from the hand of the stranger. Tearing it open, he stuffed the contents into his mouth; and, eyes rolling and muscles twitching, he chewed vigorously; expertly allowing the potent juice to trickle down his gullet just fast enough to keep his head humming like a swarm of angry

bees. Then, the cud sucked dry, he slumped down upon the mattress, physically dead to the world for the ensuing twenty-four G-P hours.

He awakened; weak, flimsy, and supremely wretched. He made heavy going to the office, where Strongheart returned to him the keys of his boat.

"Feeling low, sir." It was a statement, not a question.

"I'll say so," the Lensman groaned. He was holding his spinning head, trying to steady the gyrating universe. "I'd have to look up—'way, 'way up, with a number nine visiplat—to see a snake's belly in a swamp. Make that damn cat quit stomping his feet, can't you?"

"Too bad, but it won't last long." The voice was unctuous enough, but totally devoid of feeling. "Here's a pickup—you need it."

The Lensman tossed off the potion, without thanks, as was good technique in those parts. His head cleared miraculously, although the stabbing ache remained.

"Come in again next time. Everything's been on the green, ain't it, sir?"

"Uh-huh, very nice," the Lensman admitted. "Couldn't ask for better. I'll be back in five or six weeks, if I have any luck at all."

As the battered but stanch and powerful meteorboat floated slowly upward a desultory conversation was taking place in the dive he had left. At that early hour business was slack to the point of nonexistence, and Strongheart was chatting idly with a bartender and one of the hostesses.

"If more of the boys was like him, we wouldn't have no trouble at all," Strongheart stated with conviction. "Nice, quiet, easygoing—why, he didn't hardly damage a thing, for all his fun."

"Yeah, but at that maybe it's a good gag nobody riled him up too much," the barkeep opined. "He could be rough if he wanted to, I bet a quart. Drunk

or sober, he's chain lightning with them DeLameters."

"He's so refined, such a perfect gentleman," sighed the woman. "He's nice." To her, he had been. She had had plenty of credits from the big miner, without having given anything save smiles and dances in return. "Them two guys he drilled must have needed killing, or he wouldn't have burned 'em."

And that was that. As the Lensman had intended, Wild Bill Williams was an old, known, and highly respected resident of Miners' Rest!

OUT AMONG the asteroids again; more muscle-tearing, back-breaking, lonesome labor. Kinnison did not find any more fabulously rich meteors—such things happen only once in a hundred lifetimes—but he was getting his share of heavy stuff. Then one day when he had about half a load there came, screaming in upon the emergency wave, a call for help; a call so loud that the ship broadcasting it must be very close indeed. Yes, there she was, right in his lap; startlingly large even upon the low-power plates of his spectramp.

"Help! Spaceship *Hyperion*, position—" a rattling string of numbers. "Bergenholm dead, meteorite screens practically disabled, intrinsic velocity throwing us into the asteroids. Any spacetugs, any vessels with tractors—hurry!"

At the first word Kinnison had shoved his blast-lever full over. A few seconds of free flight, a minute of inert maneuvering that taxed to the utmost his Lensman's skill and powerful frame, and he was within the liner's air lock.

"I know something about Bergs!" he snapped. "Take this boat of mine and pull! Are you evacuating passengers?" he shot at the mate as they ran toward the engine room.

"Yes, but afraid we haven't boats

enough—overloaded,” was the gasped reply.

“Use mine—fill ‘er up!” If the mate was surprised at such an offer from the despised spacerat he did not show it. There were many more surprises in store.

In the engine room Kinnison brushed aside a crew of helplessly futile gropers and threw in switch after switch. He looked. He listened. Above all, he pried into that sealed monster of power with all his sense of perception. How glad he was now that he and Thorndyke had struggled so long and so furiously with a balky Bergenholm on that trip to tempestuous Trenoo! For as a result of that trip he did know Berge, with a sure knowledge.

“Number four lead is shot somewhere,” he reported. “Must be burned off where it clears the pilaster. Careless overhaul last time—got to take off the lower part third cover. No time for wrenches—get me a cutting beam, and get the lead out of your pants!”

The beam was brought on the double and the Lensman himself blasted away the designated cover. Then, throwing an insulated plate over the red-hot casing he lay on his back—“Hand me a light!”—and peered briefly upward into the bowels of the Gargantuan mechanism.

“I thought so,” he grunted. “Piece of four-oh stranded, eighteen inches long. Ditmars number six clip ends, spaced to twenty inches between hole-centers. Myerbeer insulation on center section, doubled. Snap it up! One of you other fellows, bring me a short, heavy screwdriver and a Ditmars six wrench!”

The technicians worked fast and in a matter of seconds the stuff was there. The Lensman labored briefly but hugely; and much more surely than if he were dependent upon the rays of the hand-lamp to penetrate the smoky, steamy,

greasy muck in which he toiled. Then:

“QX—give her the juice!” he snapped.

They gave it, and to the stunned surprise of all, she took it. The liner again was free!

“Kind of a jury-rigging I gave it, but it’ll hold long enough to get you into port, sir,” he reported to the captain in his sanctum, saluting crisply. He was in for it now, he knew, as the officer stared at him. But he couldn’t have let that shipload of passengers get ground up into hamburger. Anyway, there was no way out.

IN APPARENT reaction he turned pale and trembled, and the officer hastily took from his medicinal stores a bottle of choice brandy.

“Here, drink this,” he directed, proffering the glass.

Kinnison did so. More, he seized the bottle from the captain’s hand and drank that, too—all of it—a draft which would have literally turned him inside out a few months since. Then, to the captain’s horrified disgust, he took from his filthy dungarees a packet of bent-lam and began to chew it, ecstatically blissful. Thence, and shortly, into oblivion.

“Poor devil—you poor, poor devil,” the commander murmured, and had him put into a bunk.

When he had come to and had had his pickup, the captain came and regarded him soberly.

“You were a man once. An engineer, and a crackerjack; or I’m an oiler’s pimp,” he said levelly.

“Maybe,” Kinnison replied, white and weak. “I’m all right yet, except once in a while—”

“I know,” the captain frowned. “No cure?”

“Not a chance. Tried dozens. So—” and the Lensman spread out his hands in a hopeless gesture.

“Better tell me your name, anyway—



Miner's Rest was a meeting place for a dozen races of meteor miners—and Kim, with free-flowing liquor, made friends with them all!

your real name. That'll let your planet know that you aren't—"

"Better not," the sufferer shook his aching head. "Folks think I'm dead.

Better let them keep on thinking so. Williams is the name, sir; William Williams, of Aldebaran II."

"As you say."

"How far are we from where I boarded you?"

"Close. Less than half a billion miles. This, the second, is our home planet: your asteroid belt is just outside the orbit of the fourth."

"I can hop it in an hour, easy. Guess I'll buzz off."

"As you say," the officer agreed, again. "But we'd like to—" and he extended a sheaf of currency.

"Rather not, sir, thanks. You see, the longer it takes me to earn another stake, the longer it'll be before—"

"I see. Thanks, anyway, for us all," and captain and mate helped the derelict embark. They scarcely looked at him, scarcely dared look at each other, but—

Kinnison, for his part, was almost content. This story, too, would get around. It would be in Miners' Rest before he got back there, and it would help—help a lot.

He did not see how he could possibly, or ever, let those officers know the truth, even though he realized full well that at that very moment they were thinking, pityingly:

"The poor devil—the poor, brave devil!"

XIII.

THE Gray Lensman went back to his mining with a will and with unimpaired vigor, for his distress aboard the ship he had rescued had been sheerest acting. One small bottle of good brandy was scarcely a cocktail to the physique that had stood up under quart after quart of the crudest, wickedest, fieriest beverage known to space; that tiny morsel of bentham—scarcely half a unit—affected him no more than a lozenge of licorice.

Three weeks. Twenty-one days, each of twenty-four G-P hours. At the end of that time, he had learned from the mind of the zwilnik that the Boskonian director of this, the Borovan solar system, would visit Miners' Rest, to attend

some kind of a meeting. His informant did not know what the meeting was to be about, and he was not unduly curious about it. Kinnison, however, did and was.

The Lensman knew, or at least very shrewdly suspected, that that meeting was to be a regional conference of big-shot zwilniks; he was intensely curious to know all about everything that was to take place; and he was determined to be present.

Three weeks was lots of time. In fact, he should be able to complete his quota of heavy metal in two, or less. It was there, there was no question of that. Right out there were the meteors, unaccountable thousands of millions of them, and a certain proportion of them carried values. The more and the harder he worked, the more of these worthwhile wanderers of the void he would find. Therefore he labored long, hard, and rapidly, and his store of high-test meteors grew apace.

To such good purpose did he use beam and Spalding drill that he was ready more than a week ahead of time. That was QX—he'd much rather be early than late. Something might have happened to hold him up—things did happen, too often—and he had to be at that meeting!

Thus it came about that, a few days before the all-important date, Kinnison's battered treasure-hunter blasted herself down to her second landing at Strongheart's dock. This time the miner was welcomed, not as a stranger, but as a friend of long standing.

"Hi, Wild Bill!" Strongheart yelled at sight of the big space-bound. "Right on time, I see—glad to see you! Luck, too, I hope—lots of luck, and all good, I bet me—ain't it?"

"Ho, Strongheart!" the Lensman roared in return, pommeling the dive-keeper affectionately. "Had a good trip, yeah—a fine trip. Struck a rich sector—twice as much as I got last time.

Told you I'd be back in five or six weeks, and made it in five weeks and four days."

"Keeping tab on the days, huh?"

"I'll say I do. With a thirst like mine a guy can't do nothing else—I tell you all my guts're dryer than any desert on the whole of Mars. Well, what're we waiting for? Check this plunder of mine in and let me get to going places and doing things!"

The business end of the visit was settled with neatness and dispatch. Dealer and miner understood each other thoroughly, each knew what could and what could not be done to the other. The meteors were tested and weighed. Supplies for the ensuing trip were bought. The guarantee and twenty-four units of benny—QX. No argument. No hysterics. No bickering or quarreling or swearing. Everything on the green, all the way. Gentlemen and friends. Kinnison turned over his keys, accepted a thick sheaf of currency, and, after the first formal drink with his host, set out upon the self-imposed, superstitious tour of the other hot spots which would bring him favor—or at least would avert the active disfavor—of Klooo, his spaceman's deity.

THIS TIME, however, that tour took longer. Upon his first ceremonial round he had entered each saloon in turn, had bought one drink of whatever was nearest, had tossed it down, and had gone on to the next place; unobserved and inconspicuous. Now, how different it all was! Wherever he went he was the center of attention.

Men who had met him before flung themselves upon him with whoops of welcome; men who had never seen him clamored to drink with him; women, whether or not they knew him, fawned upon him and brought into play their every lure and wile. For not only was this man a hero and a celebrity of sorts; he was a lucky—or a skillful—miner

whose every trip resulted in wads of money big enough to clog the under jets of a Valerian freighter! Moreover, when he was lit up he threw it around regardless, and he was getting stewed as fast as he could swallow. Let's keep him here—or, if we can't do that, let's go along, wherever he goes!

This, too, was strictly according to the Lensman's expectations. Everybody knew that he did not do any serious drinking glass by glass at the bar, but bottle by bottle; that he did not buy individual drinks for his friends, but let them drink as deeply as they would from whatever container chanced then to be in hand; and his vast popularity gave him a sound excuse to begin his bottle-buying at the start instead of waiting until he got back to Strongheart's. He bought, then, several or many bottles and tins in each place, instead of a single drink. And, since everybody knew for a fact that he was a practically bottomless drinker, who was even to suspect that he barely moistened his gullet while the hangers-on were really emptying the bottles, flasks, and flagons?

And during his real celebration at Strongheart's, while he drank enough, he did not drink too much. He waxed exceedingly happy and frolicsome, as before. He was as profligate, as extravagant in tips. He had the same sudden flashes of hot anger. He fought enthusiastically and awkwardly, as Wild Bill Williams did, although only once or twice, that time; and he did not have to draw his DeLameter at all—he was so well known and so beloved! He sang as loudly and as rancously, and with the same good taste in madrigals.

Therefore, when the infiltration of thought-screened men warned him that the meeting was about to be called Kinnison was ready. He was in fact cold sober when he began his tuneful, last-two-bottles trip up the street, and he was almost as sober when he returned to "Base," empty of bottles and pockets,



to make the usual attempt to obtain more money from Strongheart and to compromise by taking his farewell chew of bentham instead.

Nor was he unduly put out by the fact that both Strongheart and the twilight were now wearing screens. He had taken it for granted that they might be, and had planned accordingly. He seized the packet as avidly as before, chewed its contents as ecstatically, and slumped down as helplessly and as idiotically. That much of the show, at least, was real. Twenty-four units of that drug will paralyze any human body, make it assume the unmistakable pose and stupefied mien of the bentham-eater. But Kinnison's mind was not an ordinary one; the dose which would have rendered any bona fide miner's brain as helpless as his body did not affect the Lensman's new equipment at all. Alcohol and bentham together were bad, but the Lensman was sober. Therefore, if anything, the drugging of his body only made it easier to dissociate his new mind from it. Furthermore, he need not waste any thought in making it act. There was only one way it could act, now, and Kinnison let his new senses roam abroad without even thinking of the body he was leaving behind him.

In view of the rigorous orders from higher up the conference room was

heavily guarded by screened men; no one except old and trusted employees were allowed to enter it, and they were also protected. Nevertheless, Kinnison got in, by proxy.

A clever pickpocket brushed against a screened waiter who was about to enter the sacred precincts, lightning fingers flicking a switch. The waiter began to protest—then forgot what he was going to say, even as the pickpocket forgot completely the deed he had just done. The waiter in turn was a trifle clumsy in serving a certain big shot, but earned no rebuke thereby; for the latter forgot the offense almost instantly. Under Kinnison's control the director fumbled at his screen-generator for a moment, loosening slightly a small but important resistor. That done, the Lensman withdrew delicately and the meeting was an open book.

"Before we do anything," the director began, "show me that all your screens are on." He bared his own—it would have taken an expert service man an hour to find that it was not functioning perfectly.

"Poppycock!" snorted the twilight. "Who in all the bells of space thinks that a Lensman would—or could—come to Euphrosyne?"

"No one can tell what this particular Lensman can or can't do, and nobody knows what he is doing until just before

he dies. Hence the strictness. "You've searched everybody here, of course?"

"Everybody." Strongheart averred, "even the drunks and dopes. The whole building is screened, besides the screens we're wearing."

"The dopes don't count, of course, provided they're really doped." No one, except the Gray Lensman himself, could possibly conceive of a Lensman being—not seeming to be, but actually being—a drunken sot, to say nothing of being a confirmed addict of any drug. "By the way, who is this Wild Bill Williams that I've been hearing about?"

Strongheart and his friend looked at each other and laughed.

"I checked up on him early," the zwilnik chuckled. "He isn't the Lensman, of course, but I thought at first he might be an agent. We frisked him and his ship thoroughly—no dice—and checked back on him as a miner, four solar systems back. He's clean, anyway; this is his second bender here. He's been guzzling everything in stock for a week, getting more pie-eyed every day, and Strongheart and I just put him to bed with twenty-four units of benny. You know what *that* means, don't you?"

"Your own benny or his?" the director asked.

"My own. That's why I know he's clean. All the other dopes are, too. The drunks we gave the bum's rush, like you told us to."

"QX. I don't think there's any danger, myself—I think that the hot-shot Lensman they're afraid of is still working Bronseca—but these orders not to take any chances at all come from 'way, 'way up."

"How about this new system they're working on, that nobody knows his boss any more?" asked the zwilnik. "Hooley, I call it."

"Not ready yet," the director answered. "They haven't been able to invent one that is safe enough for them and yet will handle the volume of work

that has to be done. In the meantime, we're using these books. Cumbersome, but absolutely safe, they say, unless and until the enemy gets onto the idea. Then one group will go into the lethal chambers of the Patrol and the rest of us will use something else. Some say that this code can't be cracked without the key; others say any code can be read in time. Anyway here's your orders. Pass them along. Give me your stuff and we'll have supper and a few drinks."

They ate. They drank. They enjoyed an evening and a night of high revelry and low dissipation, each to his taste; each secure in the knowledge that his thought-screen was one hundred percent effective against the one enemy he really feared. Indeed, the screens were that effective—then. The Lensman, having learned from the director all that he knew, had restored the generator to full efficiency in the instant of his relinquishment of control.

Although the heads of the zwilniks, and therefore their minds, were secure against Kinnison's prying, the books of record were not. And, though his body was lying helpless, inert upon a drug-fiend's cot, his sense of perception read those books; if not as readily as though they were in his hands and open, yet readily enough. And, far off in space, a power-brained Lensman yclept, Worsel, recorded upon imperishable metal a detailed account, including names, dates, facts, and figures, of all the doings of all the zwilniks of a solar system!

The information was coded, it is true; but, since Kinnison knew the key, it might just as well have been printed in English. To the later consternation of Narcotics, however, that tape was sent in under Lensman's seal—the spool could not be opened until the Gray Lensman gave the word.

IN TWENTY-FOUR hours Kinnison recovered from the effects of his debauch. He got his keys from Strongheart. He

left the asteroid. He knew the mighty intellect with whom he had next to deal, he knew where that entity was to be found; but, sad to say, he had positively no idea at all as to what he was going to do or how he was going to do it.

Wherefore it was that a sense of relief tempered, with no small degree, the natural apprehension he felt upon receiving an insistent call from Port Admiral Haynes. Truly this must be something really extraordinary, for while during the long months of his service Kinnison had called the chief of staff scores of times, Haynes had never before lensed him.

"Kinnison! Haynes calling!" the message beat into his consciousness.

"Kinnison acknowledging Haynes, sir!" the Gray Lensman thought back.

"Am I interrupting anything important?"

"No, sir, not at all. I'm just doing a little fit."

"A situation has come up which we feel you should study, not only in person, but also without advance information or preconceived ideas. Is it at all possible for you to come into Prime Base immediately?"

"Yes, sir, eminently so. In fact, a little time right now might do me good in two ways—let me mull a job over, and let a nut mellow down to a point where maybe I can crack it. At your orders, sir!"

"Not orders, Kinnison!" the old man reprimanded him sharply. "No one gives unattached Lensmen orders. We request or suggest, but you are the sole judge as to where your greatest usefulness lies."

"Please believe, sir, that your requests are orders, to me," Kinnison replied in all seriousness. Then, more lightly, "Your calling me in suggests an emergency, and traveling in this miser's scow of mine is just a trifle faster than going afoot. How about

sending out something with some legs to pick me up?"

"The *Deantless*, for instance?"

"Oh—you've got her rebuilt already?"

"Yes."

"I'll bet she's a sweet clipper! She was a mighty slick stepper before; now she must have more legs than a centipede!"

And so it came about that in a region of space entirely empty of all other vessels as far as ultra-powerful detectors could reach, the *Deantless* met Kinnison's tugboat. The two went inert and maneuvered briefly, then the immense warship engulfed her tiny companion and flashed away.

"Hi, Kim, you old son-of-a-space-flea!" A general yell arose at sight of him, and irrepressible youth rioted, regardless of Regs, in this reunion of old comrades-in-arms who were yet scarcely more than boys in years.

"His Nibs says for you to call 'em, Kim, when we're about an hour out from Prime Base," Commander Maitland informed his classmate irreverently, as the *Deantless* neared the Solarian System.

"Plate or Lens?"

"Didn't say—as you like, I suppose."

"Plate then, I guess—don't want to butt in."

In a few moments chief of staff and Gray Lensman were in image face-to-face.

"How are you making out, Kinnison?" The Port Admiral studied the young man's face intently, gravely, line by line. Then, upon his Lens, "We heard about the shows you put on, clear over here on Tellos. A man can't drink and dope the way you did without suffering consequences. I've been wondering if even you can fight it off. How about it? How do you feel now?"

"Some craving, of course," Kinnison replied, shrugging his shoulders. "That can't be helped—you can't make an omelette without breaking eggs. How-

ever, I can assure you as a fact that it's nothing I can't lick. I've got it pretty well boiled out of my system already."

"Mighty glad to hear that, son. Only Ellison and I know who Wild Bill Williams really is. You had us scared stiff for a while." Then, speaking aloud:

"I would like to have you come to my office as soon as is convenient after you land."

"I'll be there, chief, two minutes after we hit the bumpers," and he was.

"Right of way, Norma?" he asked, waving an airy salute at the attractive young woman in Haynes' outer office.

"Go right in, Lensman Kinnison, he's waiting for you," and opening the door for him, she stood aside as he strode into the sanctum.

THE PORT ADMIRAL returned the younger man's punctilious salute, then the two shook hands warmly before Haynes referred to the third man in the room.

"Navigator Xylpic, this is Lensman Kinnison, unattached. Sit down, please; this may take some time. Now, Kinnison, I want to tell you that ships have been disappearing, right and left, disappearing without sending out an alarm or leaving a trace. Convoying makes no difference, as the escorts also disappear—"

"Any with the new projectors?" Kinnison flashed the question via Lens—this was nothing to talk about aloud.

"No," came the reassuring thought in reply. "Every one bottled up tight until we find out what it's all about. Sending out the *Dareless* after you was the only exception."

"Fine. You shouldn't have taken even that much chance." This interplay of thought took but an instant; Haynes went on with scarcely a break in his voice:

"—with no more warning or report than the freighters and liners they are supposed to be protecting. Automatic

reporting also fails—the instruments simply stop sending. The first and only sign of light—if it is such a sign; which, frankly, I doubt—came shortly before I called you in, when Xylpic here came to me with a tall story."

Kinnison looked then at the stranger. Pink. Unmistakably a Chickladorian—pink all over. Bushy hair, triangular eyes, teeth, skin; all that same peculiar color. Not the flush of red blood showing through translucent skin, but opaque pigment; the brick-reddish pink so characteristic of the near-humanity of that planet.

"We have investigated this Xylpic thoroughly." Haynes went on, discussing the Chickladorian as impersonally as though he were upon his home planet instead of there in the room, listening. "The worse of it is that the man is absolutely honest—or at least, he himself believes that he is—in telling this yarn. Also, except for this one thing—this obsession, fixed idea, hallucination, call it what you like; it seems incredible that it can be a fact—he not only seems to be, but actually is, absolutely sane.

"Now, Xylpic, tell Kinnison what you have told the rest of us. And Kinnison, I hope that you can make sense of it—none of the rest of us can."

"QX. Go ahead, I'm listening." But Kinnison did far more than listen. As the fellow began to talk the Gray Lensman insinuated his mind into that of the Chickladorian. He groped for moments, seeking the wave-length; then he, Kimball Kinnison, was actually reliving with the pink man an experience which harrowed his very soul.

"The Second Navigator of a Radeligian vessel died in space, and when it landed on Chickladoria I took the berth. About a week out, the whole crew went mad, all at once. The first I knew of it was when the pilot on duty beside me left his board, picked up a stool, and smashed the automatic recorder. They

he went inert and neutralized all the controls.

"I yelled at him, but he didn't answer me, and all the men in the control room acted funny. They just smiled around like men in a trance. I buzzed the captain, but he didn't acknowledge either. Then the men around me left the control room and went down the companionway toward the main lock. I was scared—my skin prickled and the hair on the back of my neck stood straight up—but I followed along, quite a ways behind, to see what they were going to do. The captain, all the rest of the officers, and the whole crew joined them in the lock. Everybody was acting kind of crazy, and as if they were in an awful hurry to get somewhere.

"I didn't go any nearer—I wasn't going to go out into space without a suit on. I went back into the control room to get at a spy ray, then changed my mind. That was the first place they would come to if they boarded us, as they probably would—other ships had disappeared in space, plenty of them. Instead, I went over to a lifeboat and used its spy. And I tell you, sir, there was nothing there—nothing at all!" The stranger's voice rose almost to a shriek, his mind quivered in an ecstasy of horror.

"Steady, Xylpic, steady," the Gray Lensman said, quietly. "Everything you've said so far makes sense. It all fits right into the matrix. Nothing to go off the beam about, at all."

"What! You believe me!" the Chick-ladorian stared at Kinnison in amazement,

an emotion very evidently shared by the Port Admiral.

"Yes," the man in gray leather asserted. "Not only that, but I have a very fair idea of what's coming next. G. A."

"THE MEN walked out into space." The pink man offered this information diffidently, although positively—an oft-repeated but starkly incredible statement. "They did not float outward, sir, they walked; and they acted as if they were breathing air, not space. And as they walked they sort of faded out; became thin, mistylike. This sounds crazy, sir—to Kinnison alone—"I thought then maybe I was cuckoo, and everybody around here thinks I am now, too. Maybe I am nuts, sir—I don't know."

"I do. You aren't," Kinnison said, calmly.

"Well, and here comes the worst of it, they walked around just as though they were in a ship, growing fainter all the time. Then some of them lay down and something began to skin one of them—skin him alive, sir—but there was nothing there at all. I ran, then. I got into the fastest lifeboat on the far side and gave her all the ool she'd take. That's all, sir."

"Not quite all, Xylpic, unless I'm badly mistaken. Why didn't you tell the rest of it while you were at it?"

"I didn't dare to, sir. If I'd told any more they would have known I was crazy instead of just thinking so—" He

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broke sharply, his voice altering strangely as he went on: "What makes you think there was anything more, sir? Do you—" The question trailed off into silence.

"I do. If what I think happened really did happen, there was more—quite a lot more—and worse. Wasn't there?"

"I'll say there was!" The navigator almost exploded in relief. "Or rather, I think now that there was. But I can't describe any of it very well—everything was getting fainter all the time, and I thought that I must be imagining most of it."

"You weren't imagining a thing—" the Lensman began, only to be interrupted by Haynes.

"Hell's jingling bells!" that worthy almost shouted. "If you know what it was, tell me!"

"Think I know, but not quite sure yet—got to check it. Can't get it from him—he's told everything he really knows. He didn't really see anything, it was practically invisible. Even if he had tried to describe the whole performance you wouldn't have recognized it. Nobody could have, except Worsel and I, and possibly Van Buskirk. I'll tell you the rest of what actually happened and Xylpic can tell us if it checks." His features grew taut, his voice became hard and chill. "I saw it done, once. Worse, I heard it. Saw it and heard it, clear and plain. Also, I knew what it was all about, so I can describe it a lot better than Xylpic possibly can."

"Every man of that crew was killed by torture. Some were flayed alive, as Xylpic said; then they were carved up, slowly and piecemeal. Some were stretched, pulled apart by chains and hooks, on racks. Others twisted on frames. Boiled, little by little. Picked apart, bit by bit. Gassed. Eaten away by corrosives, one molecule at a time. Pressed out flat, as though between two plates of glass. Whipped. Scourged.

Beaten gradually to a pulp. Other methods, lots of them—indescribable. All slow, though, and extremely painful. Greenish-yellow light, showing the aura of each man as he died. Beams from somewhere—possibly invisible—consuming the auras. Check, Xylpic?"

"Yes, sir, it checks!" The Chickladorian exclaimed in profound relief; then added, carefully: "That is, that's the way the torture was, exactly, sir, but there was something funny, a difference, about their fading away. I can't describe what was funny about it, but it didn't seem so much that they became invisible as that they went away, sir, even though they didn't go any place."

"That's due to the way that system of invisibility works. Got to be—nothing else will fit into—"

"The Overlords of Delgon!" Haynes rasped, sharply. "But if that's a true picture, how in all the bells of space did this Xylpic, alone of all the ship's personnel, get away clean? Tell me that!"

"Simple!" the Gray Lensman snapped back as sharply. "The rest were all Radeligians—he was the only Chickladorian aboard. The Overlords simply didn't know that he was there." They didn't feel him at all. Chickladorians think on a wave nobody else in the Galaxy uses—you must have noticed that when you felt of him with your Lens. It took me half a minute to synchronize with him.

"As for his escape, that makes sense, too. The Overlords are slow workers and when they're playing that game they really concentrate on it—they don't pay any attention to anything else. By the time they got done and were ready to take over the ship, he could be almost anywhere."

"But he says that there was no ship there—nothing at all!" Haynes protested.

"Invisibility isn't hard to understand." Kinnison countered. "We've almost got it ourselves—we undoubtedly could have

it as good as that, with a little more work on it. There was a ship there, beyond question. Close. Hooked on with magnets, and with a spectube, lock to lock.

"The only peculiar part of it, and the bad part, is something you haven't mentioned yet. What would the Overlords—*if*, as we must assume, some of them got away from Worsel and his crew—be doing with a ship? They never had any spaceships that I ever knew anything about, nor any other mechanical devices requiring any advanced engineering skill. Also, and most important, they never did and never could invent or develop such an invisibility apparatus as that."

KINNISON fell silent, and while he frowned in thought Haynes dismissed the Chickadeerism, with orders that his every want be supplied.

"What do you deduce from these facts?" the Port Admiral presently asked.

"Plenty," the Gray Lensman said, darkly. "I smell a rat. In fact, it stinks to high Heaven. Bookone."

"You may be right," the chief of staff conceded. It was hopeless, he knew, for him to try to keep up with this man's mental processes. "But why, and above all, how?"

"Why' is easy. They both owe us a lot, and want to pay us in full. Both hate us all to pieces. How' is immaterial. One found the other, some way. They're together, just as sure as hell's a mantrap, and that's what matters. It's bad. Very, very bad, believe me."

"Orders?" asked Haynes. He was a big man; big enough to ask instructions from anyone who knew more than he did—big enough to make no bones of such asking.

"One does not give orders to the Port Admiral," Kinnison mimicked him lightly, but meaningly. "One may request, perhaps, or suggest, but—"

"Skip it! I'll take a club to you yet, you young hellion! You said you'd take orders from me. QX—I'll take 'em from you. What are they?"

"No orders yet, I don't think—" Kinnison ruminated. "No . . . not until after we investigate. I'll have to have Worsel and Van Buskirk; we're the only three who have had experience. We'll take the *Damless*, I think—it'll be safe enough. Thought-screens will stop the Overlords cold, and a scrambler will take care of the invisibility business if they use the same principle we do, and they very probably do."

"Safe enough, then, you think, to let traffic resume, if they're protected with screens?"

"I wouldn't say so. They've got Boskonian superdreadnoughts now to use if they want to, and that's something else to think about. Another week or so won't hurt much—better wait until we see what we can see. I've been wrong once or twice before, too, and I may be again."

He was. Although his words were conservative enough, he was practically certain in his own mind that he knew all the answers. But how wrong he was—how terribly, how tragically wrong! For even his mentality had not as yet envisaged the incredible actuality; his deductions and perceptions fell far, far short of the appalling truth!

XIV.

THE FASHION in which the Overlords of Delgon had come under theegis of Bookone, while obscure for a time, was in reality quite simple and logical; for upon distant Jarnevon the Eich had profited signally from Eichlan's disastrous raid upon Arisia. Not exactly in the sense suggested by Eukonidor, the Arisian guardian, it is true, but profited nevertheless. They had learned that thought, hitherto considered only a valuable adjunct to achievement, was

actually an achievement in itself; that it could be used as a weapon of surpassing power.

Eukonidor's homily, as he more than suspected at the time, might as well never have been uttered, for all the effect it had upon the life or upon the purpose in life of any single member of the race of the Eich. Eichmil, who had been Second of Boskone, was now First; the others were advanced correspondingly; and a new Eighth and Ninth had been chosen to complete the roster of the council which was Boskone.

"The late Eichlan," Eichmil stated harshly after calling the new Boskone to order—which event took place within a day after it became apparent that the two bold spirits had departed to a bourne from which there was to be no returning—"erred seriously, in fact fatally, in underestimating an opponent, even though he himself was prone to harp upon the danger of that very thing.

"We are agreed that our objectives remain unchanged; and also that greater circumspection must be used until we have succeeded in discovering the hitherto unsuspected potentialities of pure thought. We will now hear from one of our new members, the Ninth, also a psychologist, who most fortunately had been studying this situation even before the inception of the expedition which yesterday came to such a catastrophic end."

"It is clear," the Ninth of Boskone began, "that Arisia is at present out of the question. Perceiving the possibility of some such dénouement—an idea to which I repeatedly called the attention of my predecessor psychologist, the late Eighth—I have been long at work upon certain alternative measures.

"Consider, please, that we learned first of the thought-screens from Helmut; who was then of the opinion that they were first used in the Tellurian Galaxy by the natives of Velantia. This belief was amended later, in discredited re-



ports, to one that said devices did in fact originate upon Arisia. This latter conclusion we may now accept as a fact; since the Arisians could and did break such screens by the application of mental forces either of greater magnitude than they could withstand or of some new and as yet unknown composition or pattern.

"Such screens were, however, and probably still are, used largely and commonly upon the planet Velantia. Therefore they must have been both necessary and adequate. The deduction is, I believe, defensible that they were used as a protection against entities who were,



"I saw them walk out of the ship into space—but as though they walked on something, something invisible. And they walked into that ghost-ship, the hell-ship from nowhere—"

and who still may be, employing against the Velantians the weapons of pure thought which we wish to investigate and to acquire.

"I propose, then, that I and a few others of my selection continue this research, not upon Arisia, but upon Velantia and perhaps elsewhere."

To this suggestion there was no demur and a vessel set out forthwith. The visit to Velantia was simple and created no untoward disturbance whatever. In this connection it must be remembered

that the natives of Velantia, then in the early ecstasies of discovery by the Galactic Patrol and the consequent acquisition of inertialess flight, were fairly reveling in visits to and from the widely-variant peoples of the planets of hundreds of other suns. It must be borne in mind that, since the Eich were, if anything, physically more like the Velantians than were the men of Tellus, the presence of a group of such entities upon the planet would create no more interest or comment than that of a group

of human beings. Therefore that fateful visit went unnoticed at the time, and as it was only by long and arduous research, after Kinnison had deduced that some such visit must have been made, that it was shown to have been an actuality.

Space forbids any detailed account of what the Ninth of Boskone and his fellows did, although that story of itself would be no mean epic. Suffice it to say, then, that they became well acquainted with the friendly Velantians; they studied and they learned. Particularly did they seek information concerning the noisome Overlords of Delgon, although the natives did not care to dwell at any length upon the subject.

"Their power is broken," they were wont to inform the questioners, with airy flirtings of tail and wing. "Every known cavern of them, and not a few hitherto unknown caverns, have been blasted out of existence. Whenever one of them dares to obtrude his mentality upon any one of us he is at once hunted down and slain. Even if they are not all dead, as we think, they certainly are no longer a menace to our peace and security."

HAVING secured all the information available upon Velantia, the Eich went to Delgon, where they devoted all the power of their admittedly first-grade minds and all the not inconsiderate resources of their ship to the task of finding and uniting the remnants of what had once been a flourishing race, the Overlords of Delgon.

The Overlords! That monstrous, repulsive, amoral race which, not excepting even the Eich themselves, achieved the most universal condemnation ever to have been given in the long history of the Galactic Union. The Eich, admittedly deserving of the fate which was theirs, had and have their apologists. The Eich were wrong-minded, all admit. They were anti-social, blood-mad, ob-

essed with an insatiable lust for power and conquest which nothing except complete extinction could extirpate. Their evil attributes were legion. They were, however, brave. They were organizers par excellence. They were, in their own fashion, creators and doers. They had the courage of their convictions and followed them to the bitter end.

Of the Overlords, however, nothing good has ever been said. They were debased, cruel, perverted to a degree starkly unthinkable to any normal intelligence, however housed. In their native habitat they had no weapons, nor need of any. Through sheer power of mind they reached out to their victims, even upon other planets, and forced them to come to the gloomy caverns in which they had their being. There the victims were tortured to death in numberless unspeakable fashions, and while they died the captors fed, ghoulishly, upon the departing life principle of the sufferers.

The mechanism of that absorption is entirely unknown; nor is there any adequate evidence as to what end was served by it in the economy of that horrid race. That these orgies were not essential to their physical well-being is certain, since many of the creatures survived for a long time after the frightful rites were rendered impossible.

Be that as it may, the Eich sought out and found many surviving Overlords. The latter tried to enslave the visitors and to bend them into their hideously sadistic purposes, but to no avail. Not only were the Eich protected by thought-screens; they had minds of a fierce power almost, if not quite, equal to the Overlord's own. And, after these first overtures had been made and channels of communication established, the alliance was a natural.

Much has been said and written of the binding power of love. That, and other noble emotions, have indeed performed wonders. It seems to this his-

torian, however, that all too little has been said of the effectiveness of pure hate as a cementing material. Probably for good and sufficient moral reasons; perhaps because—and for the best—its application has been of comparatively infrequent occurrence. Here, in the case in hand, we have history's best example of two entirely dissimilar peoples working efficiently together under the urge, not of love or of any other lofty sentiment, but of sheer, stark, unalloyed and corrosive, but common, hate.

Both hated civilization and everything pertaining to it. Both wanted revenge; wanted it with a searing, furious need almost tangible; a gnawing, burning lust which neither countenanced palliation nor brooked denial. And above all, both hated vengefully, furiously, esuriently—every way except blindly—an as yet unknown and unidentified wearer of the million-times accursed Lens of the Galactic Patrol!

The Eich were hard, ruthless, cold; not even having such words in their language as "conscience," "mercy," or "scruple." Their hatred of the Lensman was then a thing of an intensity unknowable to any human mind. Even that emotion, however, grim as it was and fearsome, paled beside the passionately vitriolic hatred of the Overlords of Delgon for the being who had been the Nemesis of their race.

And when the sheer mental power of the Overlords, unthinkable great as it was and operative without in a fashion sheerly incomprehensible to us of civilization, was combined with the ingenuity, resourcefulness, and drive, as well as with the scientific ability of the Eich, the results would in any case have been portentous indeed.

In this case they were more than portentous, and worse. Those prodigious intellects, fanned into fierce activity by fiery blasts of hatred, produced a thing incredible.

XV.

BEFORE the *Dauntless* was serviced for the flight into the unknown Kimmison changed his mind. He was vaguely troubled about the trip. It was nothing as definite as a "hunch"; hunches are, the Gray Lensman knew, the results of the operation of an extrasensory perception possessed by all of us in greater or lesser degree. It was probably not an obscure warning to his super-sense from another, more pervasive dimension. It was, he thought, a repercussion of the doubt in Xylpic's mind, that the fading out of the men's bodies had been due to simple invisibility.

"I think I'd better go alone, chief," he informed the Port Admiral one day. "I'm not quite as sure as I was as to just what they've got."

"What difference does that make?" Haynes demanded.

"Lives," was the terse reply.

"Your life is what I'm thinking about. You'll be safer with the big ship, you can't deny that."

"We'll, perhaps. But I don't want—"

"What you want is immaterial."

"How about a compromise? I'll take Worsel and Van Baskirk. When the Overlords hypnotized him that time it made Bus so mad that he's been taking treatments from Worsel. Nobody can hypnotize him now, Worsel says, not even an Overlord."

"No compromise. I can't order you to take the *Dauntless*, since your authority is transcendent. You can take anything you like. I can, however, and shall, order the *Dauntless* to ride your tail wherever you go."

"QX, I'll have to take her then." Kimmison's voice grew somber. "But suppose half the crew don't get back—and that I do?"

"Isn't that what happened on the *Britannia*?"

"No," came flat answer. "We were all taking the same chance then—it was

the luck of the draw. This is different."

"How different?"

"I've got better equipment than they have. I'd be a murderer, cold."

"Not at all, no more than then. You had better equipment then, too, you know, although not as much of it. Every commander of men has that same feeling when he sends men to death. But put yourself in my place. Would you send one of your best men, or let him go alone on a highly dangerous mission when more men or ships would improve his chances? Answer that, honestly."

"Probably I wouldn't," Kinnison admitted, reluctantly.

"QX. Take all the precautions you can—but I don't have to tell you that. I know you will."

THEREFORE it was the *Dowatless* in which Kinnison set out a day or two later. With him were Worsel and Van Buskirk, as well as the vessel's full operating crew of Tellurians. As they approached the region of space in which Xylpic's vessel had been attacked every man in the crew got his armor in readiness for instant use, checked his side arms, and took his emergency battle station. Kinnison turned then to Worsel.

"How d'you feel, fellow old snake?" he asked.

"Scared," the Velantian replied, sending a rippling surge of power the full length of the thirty-foot-long cable of supple, although almost steel-hard flesh that was his body. "Scared to the tip of my tail. Not that they can treat me as they did before—we three, at least, are safe from their minds—but at what they will do. Whatever it is to be, it will not be what we expect. They certainly will not do the obvious."

"That's what's clogging my jets." The Lensman agreed. "As a flapper told me once, I'm getting the screaming meameas."

"That's what you mugs get for being

so brainy," Van Buskirk put in. With a flick of his massive wrist he brought his thirty-pound spaceax to the "ready" as lightly as though it were a Tellurian dress saber. "Bring on your Overlords—squish! Just like that!" and a whistling sweep of his atrocious weapon was illustration enough.

"May be something in that, too, Bus," he laughed. Then, to the Velantian, "About time to tune in one 'em, I guess."

He was in no doubt whatever as to Worsel's ability to reach them. He knew that that incredibly powerful mind, without Lens or advanced Arisian instruction, had been able to cover eleven solar systems: he knew that, with his present ability, Worsel could cover half of space!

Although every fiber of his being shrieked protest against contact with the hereditary foe of his race, the Velantian put his mind en rapport with the Overlords and sent out his thought. He listened for seconds, motionless, then glided across the room to the thought-screened pilot and hissed directions. The pilot altered his course sharply and gave her the gun.

"I'll take her over now," Worsel said, presently. "It'll look better that way—more as though they had us all under control."

He cut the *Bergenholm*, then set everything on zero—the ship hung, inert and practically motionless, in space. Simultaneously twenty unscreened men—volunteers—dashed toward the main air lock, overcome by some intense emotion.

"Now! Screens on! Scramblers!" Kinnison yelled; and at his words a thought-screen enclosed the ship; high-powered scramblers—within whose fields no invisibility apparatus could hold—burst into action. Then the vessel was, right beside the *Dowatless*, a Boskonian in every line and member!

"Fire!"

But even as she appeared, before a

firing-stud could be pressed, the enemy craft almost disappeared again; or rather, she did not really appear at all, except as the veriest wraith of what a good, solid ship of space-alloy ought to be. She was a ghost ship, as unsubstantial as fog. Mist, tenuous, immaterial; the shadow of a shadow. A dream ship, built of the gossamer of dreams, manner by figments of horror recruited from sheerest nightmare. Not invisibility this time, Kinnison knew with a profound shock. Something else—something entirely different—something utterly incomprehensible. Xylpic had said it as nearly as it could be put into understandable words—the Boskonian ship was *leaving*, although it was standing still! It was monstrous—it couldn't be done!

Then, at a range of only feet instead of the usual "point-blank" range of hundreds of miles, the tremendous secondaries of the *Deatless* cut loose. At such a ridiculous range as that—why, the screens themselves kept anything farther away from them than that ship was—they couldn't miss. Nor did they; but neither did they hit. Those ravening beams went through and through the tenuous fabrication which should have been a vessel, but they struck nothing whatever. They went *past*—entirely harmlessly past—both the ship itself and the wraithlike but unforgettable figures which Kinnison recognized at a glance as Overlords of Delgon. His heart sank with a thud. He knew when he had had enough; and this was altogether too much.

"Go free!" he rasped. "Give 'er the ool!"

Energy poured into and through the great Hergenholm, but nothing happened; ship and contents remained inert. Not exactly inert, either, for the men were beginning to feel a new and unique sensation.

Energy raved from the driving jets, but still nothing happened. There was

none of the thrust, none of the reaction of an inert start; there was none of the lashing, quivering awareness of speed which affects every mind, however hardened to free flight, in the instant of change from rest to a motion many times faster than that of light.

"Armor! Thought-screens! Emergency stations all! Since they could not run away from whatever it was that was coming, they would face it.

—

AND SOMETHING was happening now, there was no doubt of that. Kinnison had been seasick and airsick and space-sick. Also, since cadets must learn to be able to do without artificial gravity, pseudo-inertia, and those other refinements which make space liners so comfortable, he had known the nausea and the queasily terrifying endless-fall sensations of weightlessness, as well as the even worse outrages of the sensibilities incident to inertialessness in its crudest, most basic applications. He thought that he was familiar with all the untoward sensations of every mode of travel known to science. This, however, was something entirely new.

He felt as though he were being compressed; not as a whole, but atom by atom. He was being twisted—corkscrewed in a monstrously obscure fashion which permitted him neither to move from his place nor to remain where he was. He hung there, poised, for hours—or was it for a thousandth of a second? At the same time he felt a painless, but revolting transformation progress in a series of waves throughout his entire body; a rearrangement, a writhing, crawling distortion, an incomprehensibly impossible extrusion of each ultimate corpuscle of his substance in an unknowable and non-existent direction!

As slowly—or as rapidly—as the transformation had waxed, it waned. He was again free to move. As far as he could tell, everything was almost as before. The *Deatless* was about the



As any man should under that mighty dose of bentham, Kim passed out—physically. But his mind reached out, even while the attendants carried his dulled body out—

same; so was the almost-invisible ship attached to her so closely. There was, however, a difference. The air seemed thick—familiar objects were seen blur- rily, dimly—distorted—outside the ship there was nothing except a vague blur of grayness—no stars, no constella- tions.

A wave of thought came beating into his brain. He had to leave the *Deus- less*. It was most vitally important to get into that dimly-seen companion ves- sel without an instant's delay! And even as his mind instinctively reared a barrier, blocking out the intruding thought, he recognized it for what it was—the summons of the Overlords!

But how about the thought-screens, he thought in a semidaze, then reason re- sumed accustomed sway. He was no longer in space—at least, not in the space he knew. That new, indescribable sensation had been one of *accelera- tion*—when they attained constant velocity it stopped. Acceleration— velocity—in what? To what? He did not know. Out of space as he knew it, certainly. Time was distorted, un- recognizable. Matter did not necessarily obey the familiar laws. Thought? QX—thought, lying in the subether, proba- bly was unaffected. Thought-screen generators, however, being material might not—in fact, did not—work. Worsel, Van Buskirk, and he did not need them, but those other poor devils—

He looked at them. The men—all of them, officers and all—had thrown off their armor, thrown away their weapons, and were again rushing toward the lock. With a smothered curse Kimmison fol- lowed them, as did the Velantian and the giant Dutch-Valerian. Into the lock. Through it, into the almost invisible spacetube, which, he noticed, was floored with a much denser-appearing substance. The air felt heavy; dense, like water, or even more like metallic mercury. It breathed, however, QX. Into the Boskonian ship, along corridors, into a

room which was precisely such a torture chamber as Kimmison had described. There they were, ten of them; ten of the dragonlike, repulian Overlords of Delgon!

They moved slowly, sluggishly, as did the Tellurians, in that thick, dense medium which was not, could not be, air. Ten chains were thrown, like pic- tures in slow motion, about ten human necks; ten entranced men were led un- resistingly to anguished doom. This time the Gray Lensman's curse was not smothered—with a blistering deep-space oath he pulled his DeLameter and fired—once, twice, thrice. No soap—he knew it, but he had to try. Furious, he launched himself. His taloned fingers, ravening to tear, went past, not around, the Overlord's throat; and the scimi- tared tail of the reptile, fierce-driven, apparently went through the Lensman, screens, armor, and brisquet, but touched none of them in passing. He hurled a thought a more disastrous bolt by far than he had sent against any mind since he had learned the art. In vain—the Overlords, themselves masters of men- tality, could not be slain or even swerved by any forces at his command.

Kimmison reared back then in thought. There must be some ground, some sub- stance common to the planes or dimen- sions involved, else they could not be here. The deck, for instance, was as solid to his feet as it was to the enemy. He thrust out a hand at the wall beside him—it was not there. The chains, how- ever, held his suffering men, and the Overlords held the chains. The knives, also and the clubs, and the other imple- ments of torture being wielded with such peculiarly horrible slowness.

To think was to act. He leaped for- ward, seized a maul, and made as though to swing it in terrific blow; only to stop, shocked. The maul did not move! Or rather, it moved, but so slowly, as though

he were hauling it through putty! He dropped the handle, shoving it back, and received another shock, for it kept on coming under the urge of his first mighty heave—kept coming, knocking him aside as it came!

Mass! Inertia! The stuff must be a hundred times as dense as platinum!

"Bus!" he flashed a thought to the staring Valerian. "Grab one of these clubs here—a little one, even you can't swing a big one—and get to work!"

As he thought, he leaped again; this time for a small, slender knife, almost a scalpel, but with a long, keenly thin blade. Even though it was massive as a dozen broadswords he could swing it and he did so; plunging lethally as he swung. A full-arm sweep—razor-edge shearing, crunching through plated, corded throat—grisly head floating one way, horrid body the other!

Then an attack in waves of his own men! The Overlords knew what was toward. They commanded their slaves to abate the nuisance, and the Gray Lensman was buried under an avalanche of furious, although unarmed, humanity.

"Chase 'em off me, will you, Worsel?" Kinnison pleaded. "You're husky enough to handle 'em all—I'm not. Hold 'em off while Bus and I polish off this crowd, huh?" And Worsel did so.

Van Buskirk, scorning Kinnison's advice, had seized the biggest thing in sight, only to relinquish it sheepishly—he might as well have attempted to wield a bridge-girder! He finally selected a tiny bar, only half an inch in diameter and scarcely six feet long; but he found that even this sliver was more of a bludgeon than any spacaxe he had ever swung.

Then the armed pair went joyously to war, the Tellurian with his knife, the Valerian with his magic wand. When the Overlords saw that a fight to the finish was inevitable they also seized

weapons and fought with the desperation of the cornered rats they were. This, however, freed Worsel from guard duty, since the monsters were fully occupied in defending themselves. He seized a length of chain, wrapped six feet of tail in an unbreakable anchorage around a torture rack, and set viciously to work.

Thus again the intrepid three, the only minions of civilization theretofore to have escaped alive from the clutches of the Overlords of Delgon, fought side by side. Van Buskirk particularly was in his element. He was used to a gravity almost three times Earth's; he was accustomed to enormously heavy, almost viscous air. This stuff, thick as it was, tasted infinitely better than the vacuum that Tellurians liked to breathe. It let a man use his strength; and the gigantic Dutchman waded in happily, swinging his frightfully massive weapon with devastating effect. *Crack! Splash! THWUCK!* When that bar struck it did not stop. It went through; blood, brains, smashed heads and dismembered limbs flying in all directions. And Worsel's lethal chain, driven irresistibly at the end of the twenty-five-foot lever of his free length of body, clanked, hummed, and snarled its way through reptilian flesh. And, while Kinnison was puny indeed in comparison with his two brothers-in-arms, he had selected a weapon which would make his skill count; and his wicked knife stabbed, sheared, and trenchantly bit.

And thus, instead of dealing out death, the Overlords died.

XVI.

THE CARNAGE over, Kinnison made his way to the control board, which was more or less standard in type. There were, however some instruments new to him; and these he examined with care, tracing their leads throughout their lengths with his sense of perception before he touched a switch. Then he

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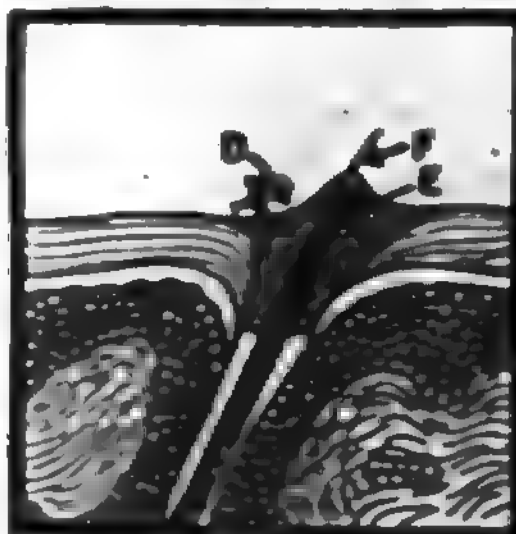
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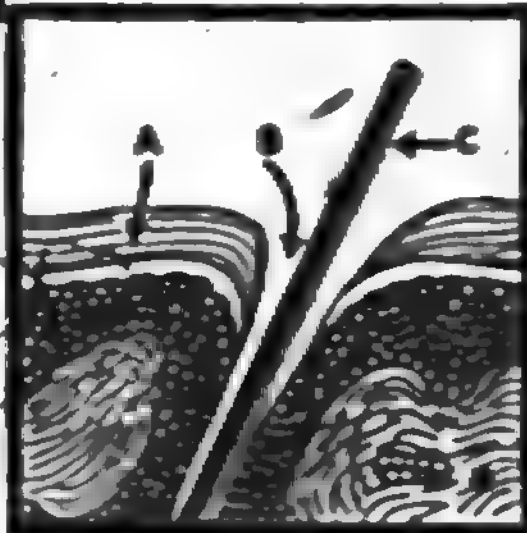
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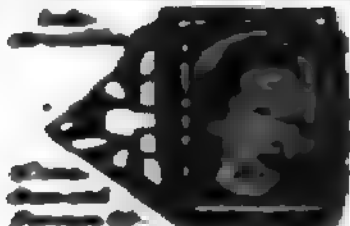


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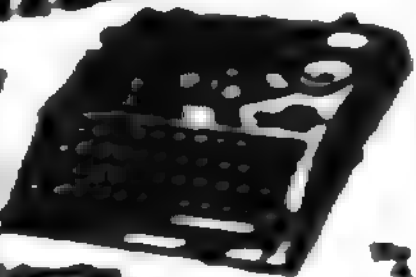


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pulled out three plungers, one after the other.

There was a jarring thrust! and a reversal of the inexplicable, sickening sensations he had experienced previously. They ceased; the ships, solid now and still locked side by side, lay again in open, familiar space.

"Back to the *Deatless*," Kinnison directed, tersely, and they went; taking with them the bodies of the slain patrolmen. The ten who had been tortured were dead; twelve more had perished under the mental forces or the physical blows of the Overlords. Nothing could be done for any of them save to take their remains back to Tellos.

"What do we do with this ship? Let's burn her out, huh?" asked Van Bunkirk.

"Not on Tuesdays—the College of Science would fry me to a crisp in my own lard if I did," Kinnison retorted. "We take her in, as is. Where are we, Worsel? Have you and the navigator found out yet?"

"Way, way out—almost out of the Galaxy," Worsel replied, and one of the computers recited a string of numbers, then added, "I don't see how we could have come so far in that short a time."

"How much time was it—got any idea?" Kinnison asked, pointedly.

"Why, by the chronometers— Oh—" the man's voice trailed off.

"You're getting the idea," Wouldn't have surprised me much if we'd been wear out of the known universe. Hyperspace is funny that way, they say. Don't know a thing about it myself, except that we were in it for a while, but that's enough for me."

Back to Tellos they drove at the highest practicable speed, and at Prime Base scientists swarmed over and throughout the Bostorian vessel. They tore down, rebuilt, measured, analyzed, tested, and conferred.

"They got some of it. All of it, they say, except the stuff that is of real importance," Thorndyke reported to his friend Kinnison one day. "Old Car-

dynges is mad as a cateagle about your report of that vortex, or tunnel, or whatever it was. He says your lack of appreciation of the simplest fundamentals is something pitiful, or words to that effect. He's going to blast you to a cinder as soon as he gets hold of you."

"Vell, ve can't all be first violiners in der orchestra, some of us got to push vind through der trombone," Kinnison quoted, philosophically. "I done my darnedest. How's a guy going to report accurately on something he can't hear, see, feel, smell, taste, or sense? But I heard that they've solved that thing of the interpenetrability of the two kinds of matter. What's the low-down on that?"

"Cardynge says it's simple. Maybe it is, but I'm a technician myself, not a mathematician. As near as I can get it, the Overlords and their stuff were treated or conditioned with an oscillatory wave of some kind, so that under the combined action of the fields generated by the ship and the shore station all their substance was rotated almost out of space. Not out of space, exactly, either, more like, say, very nearly one hundred eighty degrees out of phase; so that two bodies—one untreated, our stuff—could occupy the same place at the same time without perceptible interference. The failure of either force, such as your cutting the ship's generators, would relieve the strain."

"It did more than that—it destroyed the vortex . . . but it might, at that," the Lensman went on, thoughtfully. "It could very well be that only that one special force, exerted in the right place relative to the home-station generator, could bring the vortex into being. But how about that heavy stuff, common to both planes, or phases, of matter?"

"Synthetic, they say. Not as dense as it appears—that's due largely to field-action, too. They're working on it now."

"Thanks for the dope. I've got to

fin—got a date with Haynes. I'll see Cardynge later and let him get it off his chest," and the Lensman strode away toward the Port Admiral's office.

HAYNES greeted him cordially; then, at sight of the storm signals flying in the Gray Lensman's eyes, he sobered.

"QX," he said, wearily. "If we have to go over this again, unload it, Kim."

"Twenty-two good men," Kinnison said, harshly. "I murdered them. Just as surely, if not quite as directly, as though I brained them with a space-axe."

"In one way, if you look at it fanatically enough, yes," the older man admitted, much to Kinnison's surprise. "I am not asking you to look at it in a broader sense, because you probably can't—yet. Some things you can do alone; some things you can do even better alone than with help. I have never objected; nor shall I ever object to your going alone on such missions, however dangerous they may be. That is, and will be, your job. What you are forgetting in the luxury of giving way to your emotions is that the Patrol comes first. The Patrol is of vastly greater importance than the lives of any man or group of men in it."

"But I know that, sir," protested Kinnison. "I—"

"You have a peculiar way of showing it, then," the Admiral broke in. "You say that you killed twenty-two men. Admitting it for the moment, which would you say was better for the Patrol—to lose those twenty-two good men in a successful and productive operation, or to lose the life of one Unattached Lensman without gaining any information or any other benefit whatever thereby?"

"Why . . . I— If you look at it that way, sir—" Kinnison still knew that he was right, but in that form the question answered itself.

"That is the only way it can be looked

at," the old man returned, flatly. "No heroics on your part, no mandlin sentimentality. Now, as a Lensman, is it your considered judgment that it is best for the Patrol that you traverse that hyperspatial vortex alone, or with all the resources of the *Dauntless* at your command?"

Kinnison's face was white and strained. He could not lie to the Port Admiral. Nor could he tell the truth, for the dying agonies of those fiendishly tortured boys still racked him to the core.

"But I can't order men into any such death as that," he broke out, finally.

"You must," Haynes replied, inexorably. "Either you take the ship as she is or else you call for volunteers—and you know what that would mean."

Kinnison did, too well. The surviving personnel of the two *Britannias*, the full present complement of the *Dauntless*, the crews of every other ship in Base, practically everybody on the Reservation—Haynes himself certainly, even Lacy and old von Hobendorff, everybody, even or especially if they had no business on such a trip as that—would volunteer; and every man jack of them would yell his head off at being left out. Each would have a thousand reasons for going.

"QX, I suppose. You win," Kinnison submitted, although with ill grace, rebelliously. "But I don't like it, nor any part of it. It clogs my jets."

"I know it, Kim," Haynes put a hand upon the boy's shoulder, tightening his fingers. "We all have to do it, it's part of the job. But remember always, Lensman, that the Patrol is not an army of mercenaries or conscripts. Any one of them—just as would you yourself—would go out there, knowing that it meant death in the torture chamber of the Overlords, if in so doing he knew that he could help to end the torture and the slaughter of noncombatant men,

women, and children that is now going on."

Kinnison walked slowly back to the Field; silenced, but not convinced. There was something screwy somewhere, but he couldn't—

"Just a moment, young man!" came a sharp, irritated voice. "I have been looking for you. At what time do you propose to set out for that which is being so loosely called the 'hyperspatial vortex'?"

He pulled himself out of his abstraction to see Sir Austin Cardyne. Testy, irascible, impatient, and vitriolic of tongue, he had always reminded Kinnison of a frantic hen attempting to mother a brood of ducklings.

"Hi, Sir Austin! Tomorrow—how fifteen. Why?" The Lensman had too much on his mind to be ceremonious with this mathematical nuisance.

"Because I find that I must accompany you, and it is most damnable inconvenient, sir. The Society meets Tuesday week, and that as Weingarde will—"

"Huh?" Kinnison ejaculated. "Who told you that you had to go along, or that you even could, for that matter?"

"Don't be a fool, young man!" the peppery scientist advised. "It should be apparent even to your feeble intelligence that after your fiasco, your inexcusable negligence in not reporting even the most elementary vectorial-tensorial analysis of that extremely important vortex, someone with at least a rudimentary brain should—"

"Hold on, Sir Austin!" Kinnison interrupted the harangue. "Do you mean to say that you want to come along just to study the mathematics of that damn—"

"Just to study it!" shrieked the old man, almost tearing his hair. "You dolt—you blockhead! My God, why should anything with such a brain be permitted to live? Don't you even know,

Kinnison, that in that vortex lies the solution of one of the greatest problems in all science?"

"Never occurred to me," the Lensman replied, unruffled by the old man's acid fury. He had had weeks of it, at the Conference.

"It is imperative that I go." Sir Austin was still acerbic, but the intensity of his passion was abating. "I must analyze those fields, their patterns, interactions and reactions, myself. Unskilled observations are useless, as you learned to your sorrow, and this opportunity is priceless—possibly it is unique. Since the data must be not only complete but also entirely authoritative, I myself must go. That is clear, is it not, even to you?"

"No. Hasn't anybody told you that everybody aboard is simply flirting with the undertaker?"

"Nonsense! I have subjected the af-

fair, every phase of it, to a rigid statistical analysis. The probability is significantly greater than zero—oh, ever so much greater, almost point one nine, in fact—that the ship will return, with my notes."

"But listen, Sir Austin," Kinnison explained patiently. "You won't have time to study the generators at the other end, even if the folks there felt inclined to give us the chance. Our object is to blow the whole thing clear out of space."

"Of course, of course—certainly! The mere generating mechanisms are immaterial. Analyses of the forces themselves are the sole desiderata. Vectors—tensors—performance of mechanisms in reception—ethereal and subethereal phenomena—propagation—extinction—phase angles—complete and accurate data upon hundreds of such items—slighting even one would be calamitous. Having this material, however, the

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mechanism of energizing becomes a mere detail—complete solution and design inevitable, absolute—childishly simple."

"Oh," the Lensman was slightly groggy under the barrage. "The ship may get back, but how about you, personally?"

"What difference does that make?" Cardyng snapped fretfully. "Even if, as is theoretically probable, we find that communication is impossible, my notes have a very good chance—very good indeed—of getting back. You do not seem to realize, young man, that to science that data is necessary. It is so evident that the persons or beings who are operating it do not know, or are at least not utilizing, one percent of its potentialities. They stumbled upon it—blundered into it—someone with at least a rudimentary knowledge of science must analyze it, so that the Conference may exhaust its real possibilities."

Kinnison looked down at the wispy little man in surprise. Here was something he had never suspected. Cardyng was a scientific wizard, he knew. That he had a phenomenal mind—there was no shadow of doubt, but the Lensman had never thought of him as being physically brave. It was not merely courage, he decided. It was something bigger—better. Transcendent. An utter selflessness, a devotion to science so complete that neither physical welfare nor even life itself could be given any consideration whatever.

"You think, then, that this data is worth sacrificing the lives of four hundred men, including yours and mine, to get?" Kinnison asked, earnestly.

"Certainly, or a hundred times that many," Cardyng snapped, testily. "You heard me say, did you not, that this opportunity is priceless, and may very well be unique?"

"O.K., you can come," and Kinnison went on into the *Damless*.

KINNISON WENT to bed wondering. Maybe the chief was right. He woke

up, still wondering. Perhaps he was taking himself too seriously. Perhaps he was, as Haynes had more than intimated, indulging in mock heroics.

He prowled about. The two ships of space were still locked together. They would fly together to and along that dread tunnel, and he had to see that everything was on the green.

He went into the wardroom. One young officer was thumping the piano right tunelessly and a dozen others were rending the atmosphere with joyous song. In that room any formality or "as you were" signal was unnecessary; the whole bunch fell upon their commander gleefully and with a complete lack of restraint, in a vociferous hilarity very evidently neither forced nor assumed.

Kinnison went on with his tour. "What was it?" he demanded of himself. Haynes didn't feel guilty. Cardynge was worse—he would kill forty thousand men, including the Lensman and himself, without batting an eye. These kids didn't give a damn. Their fellows had been slain by the Overlords, the Overlords had in turn been slain. All square—QX. Their turn next? So what? Kinnison himself did not want to die—he wanted to live—but if his number came up that was part of the game.

What was it, this willingness to give up life itself for an abstraction? Science, the Patrol, Civilization—notoriously ungrateful mistresses. Why? Some inner force—some compensation defying sense, reason, or analysis?

Whatever it was, he had it, too. Why deny it to others? What in all the nine hells of Valeria was he griping about?

"Maybe I'm nuts!" he concluded, and gave the word to blast off.

To blast off—to find and to traverse wholly that awful hypertube, at whose far terminus there would be lurking no man knew what.

XVII.

OUT IN SPACE Kinnison called the entire crew to a mass meeting, in which he outlined to them as well as he could that which they were about to face.

"The Boskonian ship will undoubtedly return automatically to her dock," he concluded. "That there is probably docking space for only one ship is immaterial, since the *Deatless* will remain free. That ship is not manned, as you know, because no one knows what is going to happen when the fields are released in the home dock. Consequences may be disastrous to any foreign, untreated matter within her. Some signal will undoubtedly be given upon landing, although we have no means of knowing what that signal will be and Sir Austin has pointed out that there can be no communication between that ship and her base until her generators have been cut.

"Since we also will be in hyperspace until that time, it is clear that the generator must be cut from within the vessel. Electrical and mechanical relays are out of the question. Therefore two of our personnel will keep alternate watches in her control room, to pull the necessary switches. I am not going to order any man to such a duty, nor am I going to ask for volunteers. If the man on duty is not killed outright—this is a distinct possibility, although not a probability—speed in getting back here will be decidedly of the essence. It seems to me that the best interests of the Patrol will be served by having the two fastest members of our force on watch. Time trials from the Boskonian panel to our air lock are, therefore, now in order."

This was Kinnison's device for taking the job himself. He was, he knew, the fastest man aboard, and he proved it. He negotiated the distance in seven seconds flat, over half a second faster than any other member of the crew. Then:

"Well, if you small, slow runners are

done playing creepie-mousie, get out of the way and let folks run that really can," Van Buskirk boomed. "Come on, Worsel, I see where you and I are going to get ourselves a job."

"But see here, you can't!" Kinnison protested, aghast. "I said members of the crew."

"No, you didn't," the Valerian contradicted. "You said 'two of our personnel,' and if Worsel and I ain't personnel, what are we? We'll leave it to Sir Austin."

"Indubitably 'personnel,'" the arbiter decided, taking a moment from the apparatus he was setting up. "Your statement that speed is a prime requisite is also binding."

Whereupon the winged Velantian flew and wriggled the distance in two seconds, and the steel-thewed Dutch Valerian ran it in three!

"You big, knot-headed Valerian ape!" Kinnison hissed a malevolent thought; not as the expedition's commander to a subordinate, but as an outraged friend speaking plainly to friend. "You knew I wanted that job myself, you clunker—damn your thick, hard crust!"

"Well, so did I, you poor, spindly little Tellurian wart, and so did Worsel," the giant warrior shot back in kind. "Besides it's for the good of the Patrol—you said so yourself! Comb that out of your whiskers, half-portion!" he added, with a wide and toothy grin, as he swaggered away, lightly brandishing his ponderous mace.

The run to the point in space where the vortex had been was made on schedule. Switches drove home, most of the fabric of the enemy vessel went out of phase, the voyagers experienced the weirdly uncomfortable acceleration along an impossible vector, and the familiar firmament disappeared into an impalpable but impenetrable murk of featureless, textureless gray.

Sir Austin was in his element. Indeed, he was in the seventh heaven of

rapture as he observed, recorded, and calculated. He chuckled over his interferometers, he clocked over his meters, now and again he emitted shrill whoops of triumph as a particularly abstruse bit of knowledge was torn from its lair. He strutted, he gloated, he practically purred as he recorded upon the tape still another momentous conclusion or a gravid equation, each couched in terms of such incomprehensibly formidable mathematics that no one not a member of the Conference of Scientists could even dimly perceive its meaning.

Cardyuge finished his work; and, after doing everything that could be done to insure the safe return to Science of his priceless records, he simply preened himself. He wasn't like an old hen, after all, Kinnison decided. More like a lean, gray tomcat. One that has just eaten the canary and, contemplatively smoothing his whiskers, is full of pleasant, if somewhat sanguine visions of what he is going to do to those other fellows at that next meeting.

Time wore on. A long time? Or a short? Who could tell? What possible measure of that unknown and intrinsically unknowable concept exists or can exist in that fantastic region of—hyperspace? Interspace? Pseudospace? Call it what you like.

TIME, as has been said, wore on. The ships arrived at the enemy base, the landing signal was given. Worsel, on duty at the time, recognized it for what it was—with his brain that was a foregone conclusion. He threw the switches, then flew and wriggled as even he had never done before, hurling a thought as he came.

And as the Velantian, himself in the throes of weird deceleration, tore through the thinning atmosphere, the queasy Gray Lensman watched the development about them of a forbiddingly inimical scene.

They were materializing upon a land-

ing field of sorts, a smooth and level expanse of black igneous rock. Two suns, one hot and close, one pale and distant, cast the impenetrable shadows so characteristic of an airless world. Dwarfed by distance, but still massively, craggily tremendous, there loomed the encircling rampart of the volcanic crater upon whose floor the fortress lay.

And what a fortress! New—raw—crude—but fanged with armament of might. There was the typically Boskonian dome of control, there were powerful ships of war in their cradles, there beside the *Dreadless* was very evidently the power plant in which was generated the cryptic force which made interdimensional transit an actuality. But, and here was the saving factor which the Lensman had dared only half hope to find, those ultrapowerful defensive mechanisms were mounted to resist attack from without, not from within. It had not occurred to the foe, even as a possibility, that the Patrol might come upon them in panoply of war through their own hyperspatial tube!

Kinnison knew that it was useless to assault that dome. He could, perhaps, crack its screens with his primaries, but he did not have enough stuff to reduce the whole establishment and therefore could not use the primaries at all. Since the enemy had been taken completely by surprise, however, he had a lot of time—at least a minute, perhaps a trifle more—and in that time the old *Dreadless* could do a lot of damage. The power plant came first; that was what they had come out here to get.

"All secondaries fire at will!" Kinnison barked into his microphone. He was already at his conning board, every man of the crew was at his station. "All of you who can reach twenty-seven, three-oh-eight, hit it—hard. The rest of you do as you please."

Every beam which could be brought to bear upon the powerhouse, and there were plenty of them, flamed out practi-

cally as one. The building stood for an instant, starkly outlined in a raging inferno of incandescence, then slumped down flabbily; its upper, nearer parts flaring away in clouds of sparklingly luminous vapor even as its lower members flowed sluggishly together in streams of molten metal. Deeper and deeper bored the frightful beams; foundations, subcellars, structural members and Gargantuan mechanisms uniting with the obsidian of the crater's floor to form a lake of bubbling, frothing lava.

"QX—that's good!" Kinnison snapped. "Scatter your stuff, fellows—hit 'em!"

Kinnison then spoke to Henderson, his chief pilot. "Lift us up a bit, Hen, to give the boys a better sight. Be ready to flit, fast; all hell's going to be out for noon any second now!"

Ships—warships of Boskone's mightiest—caught cold. Some crewless; some half-manned; none ready for the stunning surprise attack of the Patrolmen. Through and through them the ruthless beams tore; leaving, not ships, but nondescript masses of half-fused metal. Hangars, machine shops, supply depots suffered the same fate; a good third of the establishment became a smoking, smoldering heap of junk.

Then, one by one, the fixed-mount weapons of the enemy, by dint of what Herculean efforts can only be surmised, were brought to bear upon the bold invader. Brighter and brighter flamed her prodigiously powerful defensive screens. Number One faded out; crushed flat by the hellish energies of Boskone's projectors. Number Two flared into ever more spectacular pyrotechnics, until soon even its tremendous resources of power became inadequate—blotchily, in discrete areas, clinging to existence when all the might of its Medonian generators and transmitters, it, too, began to fall.

"Better we flit, Hen, while we're all in one piece—right now," Kinnison ad-

vised the pilot then. "And I don't mean loaf, either. Let's see you burn a hole in the ether."

Henderson's fingers swept over his board, depressing to maximum and locking down key after key. Blast after blast flared from her jets of energies of an intensity almost to pale the brilliance of the madly warring screens, and to Boskone's observers the immense Patrol raider vanished from all ken.

At that drive, the *Dawntless* incomprehensible maximum, there was little danger of pursuit: for, as well as being the biggest and the most powerfully armed, she was also the fastest thing in space.

Out in open intergalactic space—safe—discipline went by the board as though on signal and all hands joined in a release of pent-up emotion. Kinnison threw off his armor and, seizing the scandalized and highly outraged Cardynge, spun him around in dizzying, though effortless circles.

"Didn't lose a man—NOT A MAN!" he yelled, exuberantly.

He plucked the now idle Henderson from his board and wrestled with him, only to drift lightly away, ahead of a tremendous slap aimed at his back by Van Baskirk. Inertialessness takes most of the edge off rough housing, but the performance did relieve the tension and soon the ebullient youths quieted down.

The enemy base was located well outside the Galaxy. Not, as Kinnison had feared, in the Second Galaxy, but in a star cluster not too far removed from the first. Hence the flight to Prime Base did not take long.

Sir Austin Cardynge was more like a self-satisfied tomcat than ever as he gathered up his records, gave a corps of aides minute instructions regarding the packing of his equipment, and set out, figuratively but very evidently licking his chops, rehearsing the scene in which he would confound his allegedly

learned fellows, especially that insufferable puppy, that upstart Weingarde.

"And that's that," Kinnison concluded his informal report to Haynes. "They're all washed up, there, at least. Before they can rebuild, you can wipe out the whole nest. If there should happen to be one or two more such bases, the boys know now how to handle them. I think I'd better be getting back onto my own job, don't you?"

"Probably so," Haynes thought for moments, then continued: "Can you use help, or can you work better alone?"

"I've been thinking about that. The higher the tougher, and it might not be a bad idea at all to have Worsel standing by in my speedster; close by and ready all the time. He's pretty much of an army himself, mental and physical. QX?"

"Can do," and thus it came about that the good ship *Dawntless* flew again, this time out Borova way; her sole freight a sleek black speedster and a rusty, battered meteor-tug, her passengers a sinuous Velantian and a husky Tellurian.

"Sort of a thin time for you, old man, I'm afraid," Kinnison leaned unconcernedly against the towering pillar of his friend's tail, whereupon four or five grotesquely stalked eyes curled out at him speculatively. To these two, each other's appearance and shape were neither repulsive nor strange. They were friends, in the deepest, truest sense. "He's so hideous that he's positively distinguished-looking," each had boasted more than once of the other to friends of his own race.

"Nothing like that." The Velantian flashed out a leather wing and flipped his tail aside in a playfully unsuccessful attempt to catch the Earthman off balance. "Some day, if you ever learn really to think, you will discover that a few weeks' solitary, undisturbed and concentrated thought is a rare treat. To

have such an opportunity in the line of duty makes it a pleasure unalloyed."

"I always did think that you were slightly screwy at times, and now I know it," Kinnison retorted, unconvinced. "Thought is—or should be—a means to an end, not an end in itself; but if that's your idea of a wonderful time I'm glad to be able to give it to you."

They disembarked carefully in far space, the complete absence of spectators assured by the warship's fullest reach of detectors, and Kinnison again went down to Miners' Rest. Not, this time, to carouse. Miners were not carousing there. Instead, the whole asteroid was buzzing with news of the fabulously rich finds which were being made in the distant solar system of Tressilia.

Kinnison had known that the news would be there, for it was at his instructions that those rich meteors had been placed there to be found. Tressilia III was the home of the Regional Director with whom the Gray Lemman had important business to transact; he had to have a solid reason, not a mere excuse, for Bill Williams to leave Borova for Tressilia.

The lure of wealth, then as ever, was stronger even than that of drink or of drug. Miners came to revel, but instead they outfitted in haste and hied themselves to the new Klondike. Nor was this anything out of the ordinary. Such stampedes occurred every once in a while, and Strongheart and his minions were not unduly concerned. They'd be back, and in the meantime there was the profit on a lot of metal and the excess profit due to the skyrocketing prices of supplies.

"You too, Bill?" Strongheart asked without surprise.

"I'll tell the Universe!" came ready answer. "If there's metal there, I'll find it, pal." In making this declaration he was not boasting, he was merely voicing a simple truth. By this time the meteor belts of a hundred solar systems



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knew for a fact that Wild Bill Williams, of Aldebaran II could find metal if metal was there to be found.

"If it's a bloomer, Bill, come back," the divekeeper urged. "Come back anyway when you've worked it a couple of drunks."

"I'll do that, Strongheart old pal, I sure will," the Lensman agreed, amiably enough. "You run a nice joint here and I like it."

Thus Kinnison went to the asteroid belts of Tressilia and there Bill Williams found rich metal. Or, more precisely, he dumped out into space and then recovered a very special meteor indeed—one in whose fabrication Kinnison's own treasure-trove had played a leading part. He did not find it the first day, of course, nor during the first week—it would be a trifle smelly to have even Wild Bill strike it rich too soon—but after a decent interval of time.

His Tressilian find had to be very much worth while, far too much so to be left to chance; for Edmund Crownshield, the Regional Director, inhabited no such rawly obvious dive as Miners' Rest. He catered only to the upper crust; meteor miners and other similar scum were never permitted to enter his door.

When Kinnison repaired the Bergenholm of the Borovan spaceliner he had, by sheerest accident, laid the groundwork of a perfect approach, and now he was taking advantage of the circumstance. That incident had been reported widely: it was well known that Wild Bill Williams had been a gentleman once. If he should strike it rich—really rich—what would be more natural than that he should forsake the noisome space hells he had been wont to frequent in favor of such glided palaces of sin as the Crown-On-Shield?

In due time, then, Kinnison "found" his special meteor, which was big enough and rich enough so that any miner would have taken it to a Patrol station instead of to a space robber. He disposed of his whole load by analysis; then, with more money in the bank than

William Williams had ever dreamed of having, he hesitated visibly before embarking upon one of the gorgeous, spectacular sprees from which he had derived his nickname. He hesitated; then, with an effort apparent to all observers, he changed his mind.

He had been a gentleman once, he would be again. He had his hair cut, he had himself shaved every day. Manicurists dug away and scrubbed away the ingrained grime from his hardened, meteor-miner's paws. His nails, even, became pink and glossy. He bought clothes, including the full-dress shorts, barrel-top jacket, and voluminous cloak of the Aldebaranian gentleman, and wore them with easy grace.

And in the meantime he was drinking steadily. He drank, however, only the choicest beverages; decorously and—for him—sparingly. Thus, while he was seldom what could be called strictly sober, he was never really drunk. He shunned low resorts, living in the best hotels and frequenting only the finest taverns. The finest, that is, with one exception, the Crown-On-Shield. Not only did he not go there, he never spoke of or would discuss the place. It was as though for him it did not exist.

Occasionally he escorted—oh, so correctly!—a charming companion to supper or to the theater, but ordinarily he was alone. Alone by choice. Aloof, austere, possibly not quite sure of himself. He rebuffed all attempts to inveigle him into anyone of the numerous cliques with which the "upper crust" abounded. He waited for what he knew would come.

UNDERRINGS of gradually increasing numbers and importance came to him with invitations to the Crown-On-Shield, but he refused them all; curtly, definitely, and without giving reason or excuse. In the light of what he was going to do there he could not be seen in the place unless and until it was clear to all that

the visit was not of his design. Finally Crowninshield himself met the ex-miner as though by accident.

"Why haven't you been out to our place, Mr. Williams?" he asked, heartily.

"Because I didn't want to, and don't want to." Kimmison replied, flatly and definitely.

"But why?" demanded the Bostonian Director, this time in genuine surprise. "It's getting talked about—everybody comes to the Crown!—people are wondering why you never even look in on us."

"You know who I am, don't you?" The Lensman's voice was coldly level, uninflected.

"Certainly. William Williams, formerly of Alderbaran II."

"No. Wild Bill Williams, meteor miner. The Crown-On-Shield boasts that it does not solicit the patronage of men of my profession. If I go there, some dim-wit will start blasting off about miners. Then you'll have the job of snopping him up off the floor with a sponge and the Patrol will be after me with a speedster. Thanks just the same, but none of that for me."

"Oh, is that all?" Crowninshield smiled in relief. "Perhaps a natural misapprehension, Mr. Williams, but you are entirely mistaken. It is true that practicing miners do not find our society congenial, but you are no longer a miner and we never refer to any man's past. As an Aldebaranian gentleman we would welcome you. And, in the extremely remote contingency to which you refer, I assure you that you would not have to act. Any guest so boorish would be expelled."

"In that case I would really enjoy spending a little time with you. It has been a long time since I associated with persons of breeding," he explained, with engaging candor.

"I'll have a boy see to the transfer of your things," and thus the Gray Lensman allowed the swindler to persuade him

to visit the one place in the Universe where he most ardently wished to be.

For days in the new environment everything went on with the utmost decorum and circumspection, but Kimmison was not deceived. They would feel him out some way, just as effectively if not as crassly as did the zwilniks of Miners' Rest. They would have to—this was Regional Headquarters. At first he had been suspicious of thionite, but since the high-ups were not wearing anti-thionite plugs in their nostrils, he wouldn't have to either.

Then one evening a girl—young, pretty, vivacious—approached him, a pinch of purple powder between her fingers. As the Gray Lensman he knew that the stuff was not thionite, but as William Williams he did not.

"Do have a tiny smell of thionite, Mr. Williams!" she urged, coquettishly, and made as though to blow it into his face.

Williams reacted strangely, but instantaneously. He ducked with startling speed and the flat of his palm smacked ringingly against the girl's cheek. He did not slap her hard—it looked and sounded much worse than it really was—the only actual force was in the follow-up push that sent her flying across the room.

"Whatja mean, you? You can't slap girls around like that here!" and the chief bouncer came at him with a rush.

This time the Lensman did not pull his punch. He struck with everything he had, from heels to fingertips. Such was the sheer brute power of the blow that the bouncer literally somersaulted the length of the room, bringing up with a crash against the distant wall; so accurate was its placement that the victim, while not killed outright, would be unconscious for many hours to come.

Others turned then, and paused; for Williams was not running away; he was not even giving ground. Instead, he stood lightly poised upon the balls of his feet, knees bent the veriest trifle,

arms hanging at ready, eyes as hard and as cold as the iron meteorites of the space he knew so well.

"Any others of you damn zwilniks want to make a pass at me?" he demanded, and a concerted gasp arose: the word "zwilnik" was in those circles far worse than a mere fighting word. It was absolutely taboo: it was never, under any circumstance, uttered.

Nevertheless, no action was taken. At first the cold arrogance, the sheer effrontery of the man's pose held them in check; then they noticed one thing and remembered another, the combination of which gave them most emphatically to pause.

No garment, even by the most deliberate intent, could possibly have been designed as a better hiding place for DeLameters than the barrel-topped full-dress jacket of Aldebaran II; and—

Mr. William Williams, poised there in steel-spring readiness for action; so coldly self-confident; so inexplicably, so scornfully derisive of that whole roomful of men not a few of whom he knew must be armed; was also the Wild Bill Williams, meteor miner, who was widely known as the fastest and deadliest performer with twin DeLameters who had ever infested space!

XVIII.

EDMUND CROWNSHIELD sat in his office and seethed quietly, the all-pervasive blueness of the Kalocian brought out even more prominently than usual by his mood. His plan to find out whether or not the ex-miner was a spy had backfired, badly. He had had reports from Euphrosyne that the fellow was not—could not be—a spy, and now his test had confirmed that conclusion, too thoroughly by far. He would have to do some mighty quick thinking and perhaps some salve-spreading or lose him. He certainly didn't want to lose a client who had over a quarter of a mil-

don credits to throw away, and who could not possibly resist his cravings for alcohol and bentlap much longer! But curse him, what had the fellow meant by having a kit bag built of indurite, with a lock on it that not even his cleverest artists could pick!

"Come in," he called, unctuously, in answer to a tap. "Oh, it's you! What did you find out?"

"Janice isn't hurt. He didn't make a mark on her—just gave her a shove and scared hell out of her. But Clovis was nudged, believe me. He's still out—will be for hours, the doctor says. What a sock that guy's got! Clovis looks like he'd been hit with a Valerian maul."

"You're sure he was armed?"

"Must have been. Typical gun fighter's crouch. He was ready, not bluffing, believe me. The man don't live that could bluff a roomful of us like that. He was betting that he could whiff us all before we could get a gun out, and I wouldn't wonder if he was right."

"QX. Beat it, and don't let anyone come near here except Williams."

Therefore the ex-miner was the next visitor.

"You wanted to see me, Crowinshield, before I fit." Kinnison was fully dressed, even to his flowing cloak, and he was carrying his own kit. This, in an Aldebaranian, implied the extreme bright of dudgrod.

"Yes, Mr. Williams. I wish to apologize for the house. However," somewhat exasperated, "it does seem that you were abrupt, to say the least, in your reaction to a childish prank."

"Prank!" The Aldebaranian's voice was decidedly unfriendly. "Sir, to me thionite is no prank. I don't mind nitro-labe or heroin, and a little bentlap now and then is good for a man, but when anyone comes around me with thionite I object, sir, vigorously, and I don't care who knows it."

"Evidently. But that wasn't really thionite—we would never permit it—



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prospect. "We should be desolated. Mistakes will happen, sir—planetary prejudices—misunderstandings. Give us a little more time to get really acquainted, sir—" and thus it went.

Finally Kinnison let himself be mollified into staying on. With true Aldebaranian mulishness, however, he wore his armament, proclaiming to all and sundry his sole reason therefor: "An Aldebaranian gentleman, sir, keeps his word; however lightly or under whatever circumstances given. I said that I would wear these things as long as I stay here; therefore wear them I must and I shall. I will leave here any time, sir, gladly; but while here I remain armed, every minute of every day."

And he did. He never drew them, was always and in every way a gentleman. Nevertheless, the ~~rivuliter~~ were always uncomfortably conscious of the fact that those grim, formidable portables were there—always there and always ready. The fact that they themselves went armed with weapons deadly enough was all too little reassurance.

ALWAYS the quintessence of good behavior, Kinnison began to relax his barriers of reserve. He began to drink—to buy, at least—more and more. He had taken regularly a little bentham; now, as though his will to moderation had begun to go down, he took larger and larger doses. It was not a significant fact to any one, except himself, that the nearer drew the time for a certain momentous meeting the more he apparently drank and the larger the doses of bentham became.

Thus it was a purely unnoticed coincidence that it was upon the afternoon of the day during whose evening the conference was to be held that Williams' quiet and gentlemanly drunkenness degenerated into a noisy and obstreperous carousal. As a climax he demanded—and obtained—the twenty-four units of bentham which, his host knew, comprised

the highest-ceiling dose of the old, unregenerate mining days. They gave him the Titanic jolt, undressed him, put him carefully to bed upon a soft mattress covered with silken sheets and forgot him.

Before the meeting every possible source of interruption or spying was checked, rechecked, and guarded against; but no one even thought of suspecting the free-spending, hard-drinking, drug-soaked Williams. How could they?

And so it came about that the Gray Lensman attended that meeting also; as insidiously and as successfully as he had the one upon Euphrosyne. It took longer, this time, to read the reports, notes, orders, addresses, and so on, for this was a Regional meeting, not merely a local one. However, the Lensman had ample time and was a fast reader withal; and in Worsel he had an aide who could tape the stuff as fast as he could send it in. Wherefore, when the meeting broke up Kinnison was well content. He had forged another link in his chain—was one link nearer to Boskone, his goal.

As soon as Kinnison could walk without staggering he sought out his host. He was ashamed, embarrassed, bitterly and painfully humiliated; but he was still—or again—an Aldebaranian gentleman. He had made a resolution, and gentlemen of that planet did not take their gentlemanliness lightly.

"First, Mr. Crowinshield, I wish to apologize, most humbly, most profoundly, sir, for the fashion in which I have outraged your hospitality." He could slap down a girl and half-kill a guard without loss of self-esteem, but no gentleman, however inebriated, should descend to such depths of commonness and vulgarity as he had plumbed here. Such conduct was inexcusable. "I have nothing whatever to say in defense or palliation of my conduct. I can only say that in order to spare you the task of ordering me out, I am leaving."

"Oh, come, Mr. Williams, that is not at all necessary. Anyone is apt to take a drop too much occasionally. Really, my friend, you were not at all offensive, we have not even entertained the thought of your leaving us." Nor had he. The ten thousand credits which the Lensman had thrown away during his spree would have condoned behavior a thousand times worse; but Crowninshield did not refer to that.

"Thank you for your courtesy, sir, but I remember some of my actions, and I blush with shame," the Aldebaranian rejoined, stiffly. He was not to be mollified. "I could never look your other guests in the face again. I think, sir, that I can still be a gentleman; but until I am certain of the fact—until I know I can get drunk as a gentleman should—I am going to change my name and disappear. Until a happier day, sir, good-by."

Nothing could make the stiff-necked Williams change his mind, and leave he did, scattering five-credit notes abroad as he departed. However, he did not go far. As he had explained so carefully to Crowninshield, William Williams did disappear—forever. Kinnison hoped; he was all done with him—but the Gray Lensman made connections with Worsel.

"Thanks, old man," Kinnison shook one of the Velantian's gnarled, hard hands, even though Worsel never had had much use for that peculiarly human gesture. "Nice work. I won't need you for a while now, but I probably will later. If I succeed in getting the data I'll Lens it to you as usual for record—I'll be even less able than usual, I imagine, to take recording apparatus with me. If I can't get it I'll call you anyway, to help me make other arrangements. Clear ether, big fella!"

"Lock, Kinnison," and the two Lensmen went their separate ways; Worsel to Prime Base, the Tellurian on a long flit indeed. He had not been surprised to learn that the Galactic Director was

not in the Galaxy proper, but in a star cluster; nor at the information that he whom he sought was one Jalte, a Kalonian. Boskone, Kinnison thought, was a highly methodical sort of a chap—he marked out the best way to do anything, and then stuck by it through thick and thin.

KINNISON was almost wrong there, for not long afterward Boskone was called in session and that very question was discussed seriously and at length.

"Granted that the Kalonians are good executives," the new Ninth of Boskone argued. "They are strong of mind and do produce results. It cannot be claimed, however, that they are in any sense comparable to us of the Eich. Eichlan was thinking of replacing Helmoth, but he put off acting until it was too late.

"There are many factors to consider," the First replied, gravely. "The planet is uninhabitable save for warm-blooded oxygen-breathers. The base is built for such, and such is the entire personnel. Years of time went into the construction there. One of us could not work efficiently alone, insulated against its heat and its atmosphere. If the whole dome were conditioned for us, we must needs train an entire new organization to man it. Then, too, the Kalonians have to work well in hand and, with all due respect to you and the others of your mind, it is by no means certain that even Eichlan could have saved Helmoth's base had he been there. Eichlan's own doubt upon this point had much to do with his delay in acting. In the end it comes down to efficiency, and some Kalonians are efficient. Jalte is one. And, while it may seem as though I am boasting of my own selection of directors, please note that Prellin, the Kalonian director upon Bronsoca, seems to have been able to stop the advance of the Patrol."

"Seems to' may be too exactly de-

scriptive for comfort," said another, darkly.

"That is always a possibility," was conceded. "but whenever that Lensman has been able to act, he has acted. Our keenest observers can find no trace of his activities elsewhere, with the possible exception of the malfunctioning of the experimental hyperspatial tube of our allies of Delgon. Some of us have from the first considered that venture ill-advised, premature; and its seizure by the Patrol smacks more of their able mathematical physicists than of a purely hypothetical, superhuman Lensman. Therefore, it seems logical to assume that Prellin has stopped him. Our observers report that the Patrol is loath to act illegally without evidence, and no evidence can be obtained. Business was hurt, but Jake is reorganizing as rapidly as may be."

"I still say that the Galactic Base should be rebuild and-manned by the Ech," Nine insisted. "It is our sole remaining Grand Headquarters there, and since it is both the brain of the peaceful conquest and the nucleus of our new military organization, it should not be subjected to any unnecessary risk."

"And you will, of course, be glad to take that highly important command, man the dome with your own people, and face the Lensman—if and when he comes—backed by the forces of the Patrol?"

"Why . . . ah . . . no," the Ninth managed. "I am of so much more use here—"

"That's what we all think," the first said, cynically. "While I would like very much to welcome that hypothetical Lensman here, I do not care to meet him upon any other planet. I really believe, however, that any change in our organization would weaken it seriously. Jake is capable, energetic, and is as well informed as is any of us as to the possibilities of invasion by the Lensman or his Patrol. Beyond asking him whether he needs anything, and sending him everything he may wish of supplies and of reinforcements, I do not see how he can improve matters."

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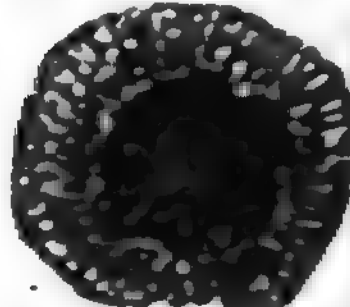
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BUT even before the question was asked, Kinnison's blackly invisible, undetectable speedster was well within the star cluster. The guardian fortresses were closer spaced by, far than Helmut's had been. Electromagnetics had a three hundred percent overlap; ether and subether alike were suffused with vibratory fields in which nullification of detection was impossible, and the observers were alert and keen. To what avail? The speedster was nondescript, intrinsically undetectable; the Lensman slipped through the net with ease.

Sliding down the edge of the world's black shadow he felt for the expected thought-screen, found it, dropped cautiously through it, and poised there; observing during one whole rotation. This had been a fair, green world—once. It had had forests. It had once been peopled by intelligent, urban dwellers, who had had roads, works, and other evidences of advancement. But the cities had been melted down into vast lakes of lava and slag. Cold now for years, cracked, fissured, weathered; yet to Kinnison's probing sense they told tales of horror, revealed all too clearly the incredible ferocity and ruthlessness with which the conquerors had wiped out all the population of a world. What had been roads and works were jagged ravines and craters of destruction. The forests of the planet had been burned, again and again; only a few charred stumps remaining to mark where a few of the mightiest monarchs had stood. Except for the Boskonian base the planet was a scene of desolation and ravishment indescribable.

"They'll pay for that, too, the fiends," Kinnison grunted, and directed his attention toward the base. Forbidding indeed it loomed; thrice a hundred square miles of massively banked offensive and defensive armament, with a central dome of such colossal mass as to dwarf even the stupendous fabrications surrounding it. Typical Boskonian by-out, Kinnison thought, very much like Helmut's Grand Base. Fully as large and as strong, or stronger—but he had

cracked that one and he was pretty sure that he could crack this. Exploringly he sent out his sense of perception; nor was he surprised to find that the whole aggregation of structures was screened. He had not thought that it would be as easy as that!

He did not need to get inside the dome this time, as he was not going to work directly upon the personnel. Inside the screen anywhere would do. But how to get there? The ground all around the thing was flat, as level as molten lava would cool, and every inch of it was bathed in the white glare of floodlights. They had observers, of course, and photo-cells, which were worse.

Approach then, either through the air or upon the ground, did not look so promising. That left only underground. They got water from somewhere—wells, perhaps—and their sewage went somewhere unless they incinerated it, which was highly improbable. There was a river over there, he'd see if there wasn't a trunk sewer running into it somewhere. There was. There was also a place within easy flying distance to hide his speedster, an overhanging bank of smooth black rock. The risk of his being seen was nil, anyway, for the only intelligent life left upon the planet inhabited the Bostonian fortress and did not leave it.

Donning his space-black, undetectable armor, Kinnison flew down the river to the sewer's mouth. He lowered himself into the placid stream and against the sluggish current of the sewer he made his way. The drivers of his suit were not as efficient in water as they were in air or in space, and in the dense medium his pace was necessarily slow. But he was in no hurry. It was fast enough—in a few hours he was beneath the stronghold.

He THEN began his study of the dome. It was like Helmuth's in some

ways, entirely different from it in others. There were fully as many firing-stations, each with its operators ready at signal to energize and to direct the most terrifically destructive agencies known to the science of the time. There were fewer visiplates and communicators, fewer catwalks; but there were vastly more individual offices and there were ranks and tiers of filing cabinets. There would have to be; this was headquarters for the organized illicit commerce of an entire galaxy. —There, in the familiar center, sat at his great desk Jake the Kalonian, and beside him there sparkled the peculiar globe of force which the Lensman now knew was an intergalactic communicator.

"Ha!" Kinnison exclaimed triumphantly, if inaudibly, to himself, "the real boss of the outfit—Bostone—is in the Second Galaxy!"

He would have to wait until that communicator went into action, if it took a month. But in the meantime there was plenty to do. Those cabinets at least were not thought-screened, they held all the really vital secrets of the drug ring, and it would take many days to transmit the information which the Patrol must have if it were to make a one-hundred-percent clean-up of the whole zwilnik organization.

He called Worsel, and, upon being informed that the recorders were ready, he started in. Characteristically, he began with Prellin of Bronacca, and memorized the data covering that wight as he transmitted it. The next one to go down upon the steel tape was Crownshield of Tressilia. Having exhausted all the filed information upon the organization controlled by those two Regional Directors, he took the rest of them in order.

He had finished his real task and had practically finished a detailed survey of the entire Base when the force-ball communicator burst into activity. Know-

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ing approximately the analysis of the beam and exactly its location in space, it took only seconds for Kinnison to try it; but the longer the interview went on the more disappointed the Lensman grew. Orders, reports, discussions of broad matters of policy—it was simply a conference between two high executives of a vast business firm.

"I assume from lack of mention that the Lensman has made no further progress," Eichmull concluded.

"Not so far as our best men can discover," Jalte replied, carefully, and Kinnison grinned like the Cheshire cat in his secure, if uncomfortable, retreat. It tickled his vanity immensely to be referred to so matter-of-factly as the Lensman, and he felt very smart and cozy indeed to be within a few hundred feet of Jalte as the Boskonian uttered the words. "Lensmen by the score are still working Prellin's base in Cominoche. Some twelve of these—human or approximately so—have been returning again and again. We are checking those with care, because of the possibility that one of them may be the one we want, but as yet I can make no conclusive report."

The connection was broken, and the Lensman's brief thrill of elated self-satisfaction died away.

"No soap," he growled to himself in disgust. "I've got to get into that guy's mind, some way or other!"

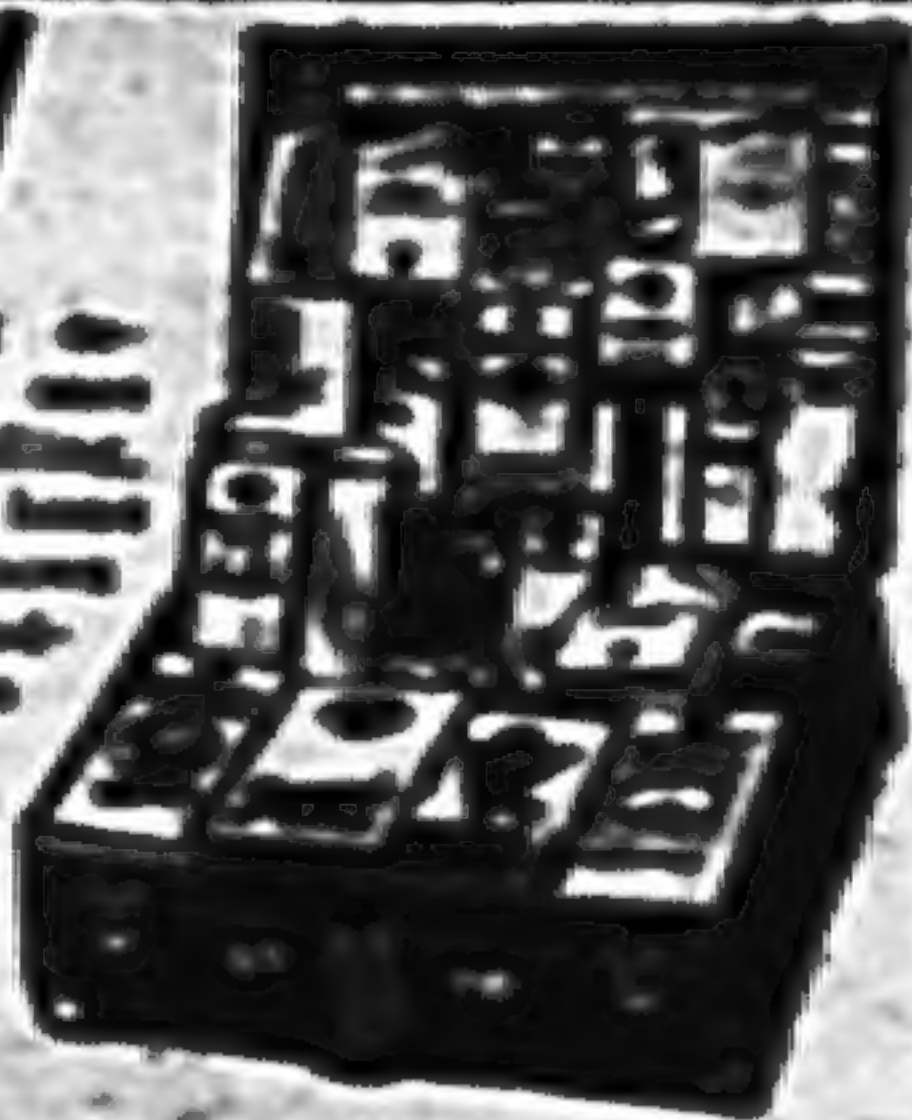
How could he make the approach? Every man in the Base wore a head-screen, and they were mighty careful. No dogs or other pet animals. There were few birds, but it would smell very cheesy indeed to have a bird flying around, pecking at screen generators. To anyone with half a brain that would tell the whole story, and these folks were really smart. What, then?

THERE WAS a nice spider up there in a corner. Big enough to do light work, but not big enough to attract much, if

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Kinnison knew that already. His office was in the Second Galaxy, on the planet Jarnevon. Jake had been there—coordinates so and so, courses such and such—Eichmil reported to Boskone—

The Lensman stiffened. Here was the first positive evidence he had found that his deductions were correct—or even that there really was such an entity as Boskone! He bored anew.

Boskone was not a single entity, but a council—probably of the Eich, the natives of Jarnevon—weird impressions of coldly intellectual reptilian monstrosities, horrific, indescribable—Eichmil must know exactly who and where Boskone was. Jake did not.

Kinnison finished his research and abandoned the Kalonian's mind as insidiously as he had entered it. The spider opened the short, restoring the screen to usefulness. Then, before he did anything else, the Lensman directed his small ally to a whole family of young grubs just under the cover of his man-nole. Lensmen paid their debts, even to spiders.

Then, with a profound sigh of relief, he dropped down into the sewer. The submarine journey to the river was made without incident, as was the flight to his speedster. Night fell, and through its blackness there darted the even blacker shape which was the Lensman's little ship. Out into intergalactic space she flashed, and homeward. And as she flew the Tellurian scowled.

He had gained much, but not enough by far. He had hoped to get all the data on Boskone, so that he could storm Headquarters in the van of Civilization's armada, invincible in its newly-devised might.

No soap. Before he could do that he would have to scout Jarnevon—in the Second Galaxy—alone. Alone? Better not. Better take the flying snake along. Good old dragon. That was a mighty long flit to be doing alone, and one with some mighty high-powered opposition at the other end of it.

TO BE CONCLUDED.

1. The first part of the paper is a review of the literature on the effects of the 1997 Asian financial crisis on the economies of the Asian countries. It shows that the crisis had a significant negative impact on the economies of the Asian countries, particularly on the economies of the newly industrialized countries (NICs).

[illegible]

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